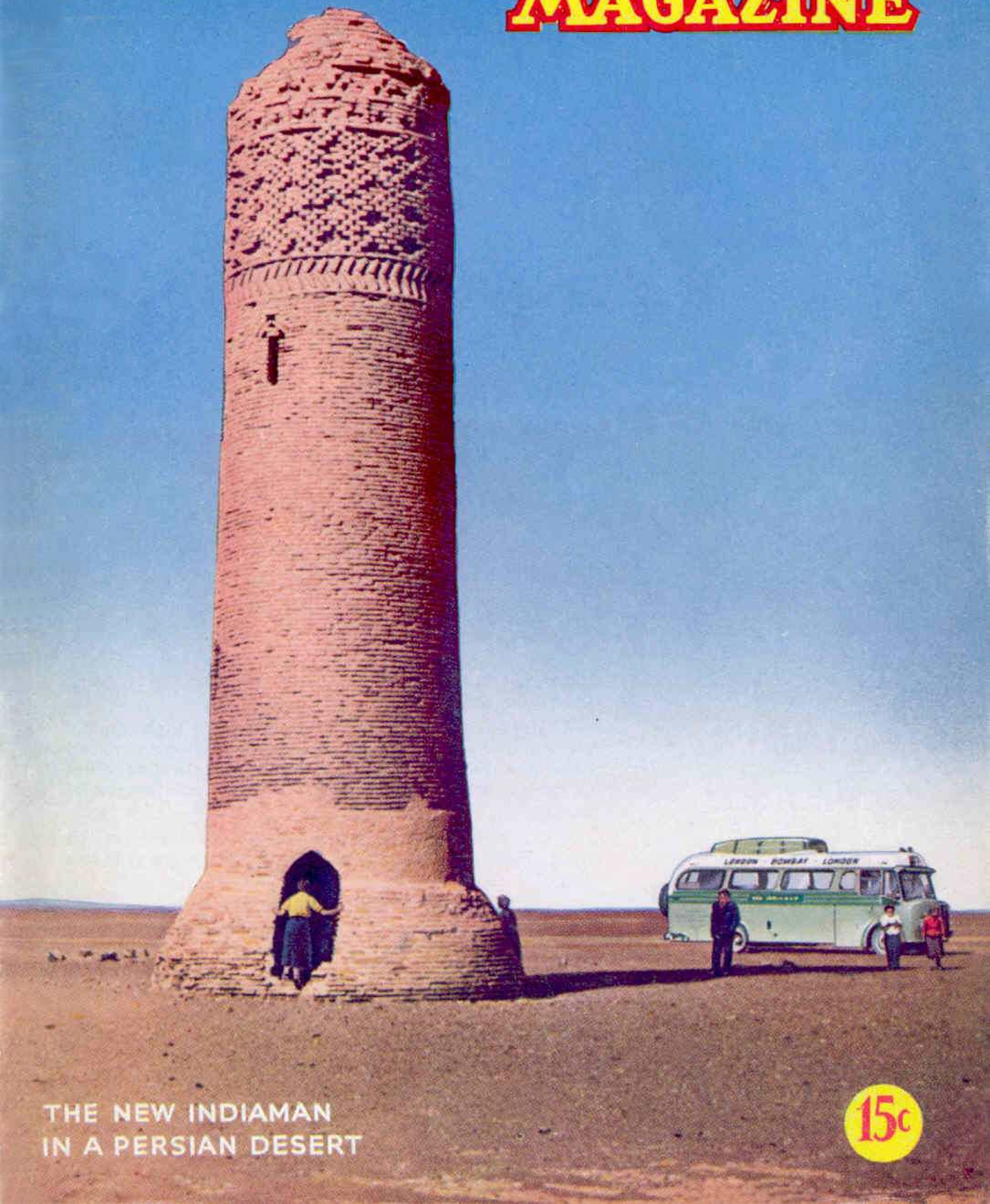


VOL. XLIV. No. 10

OCTOBER 1959

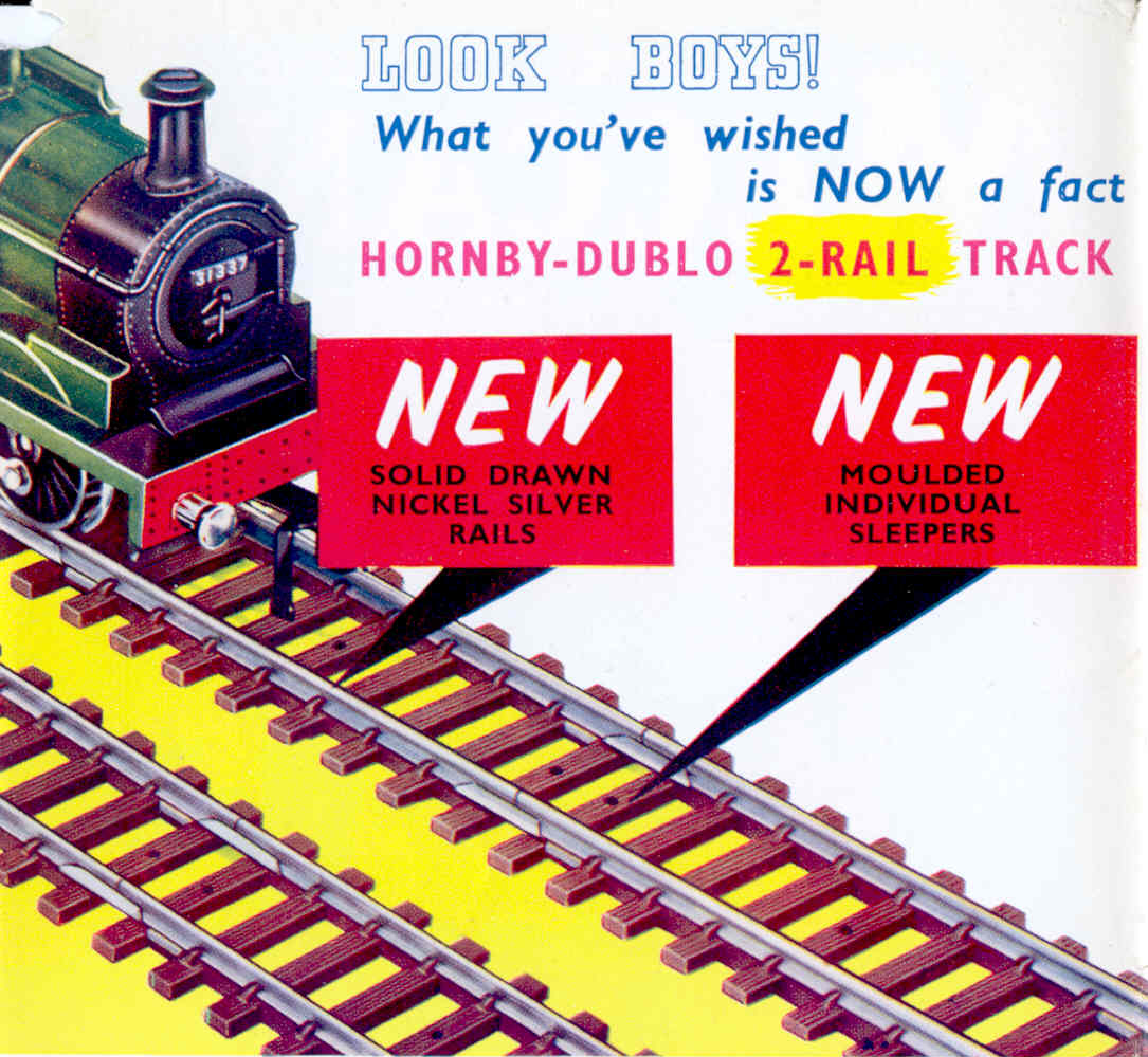
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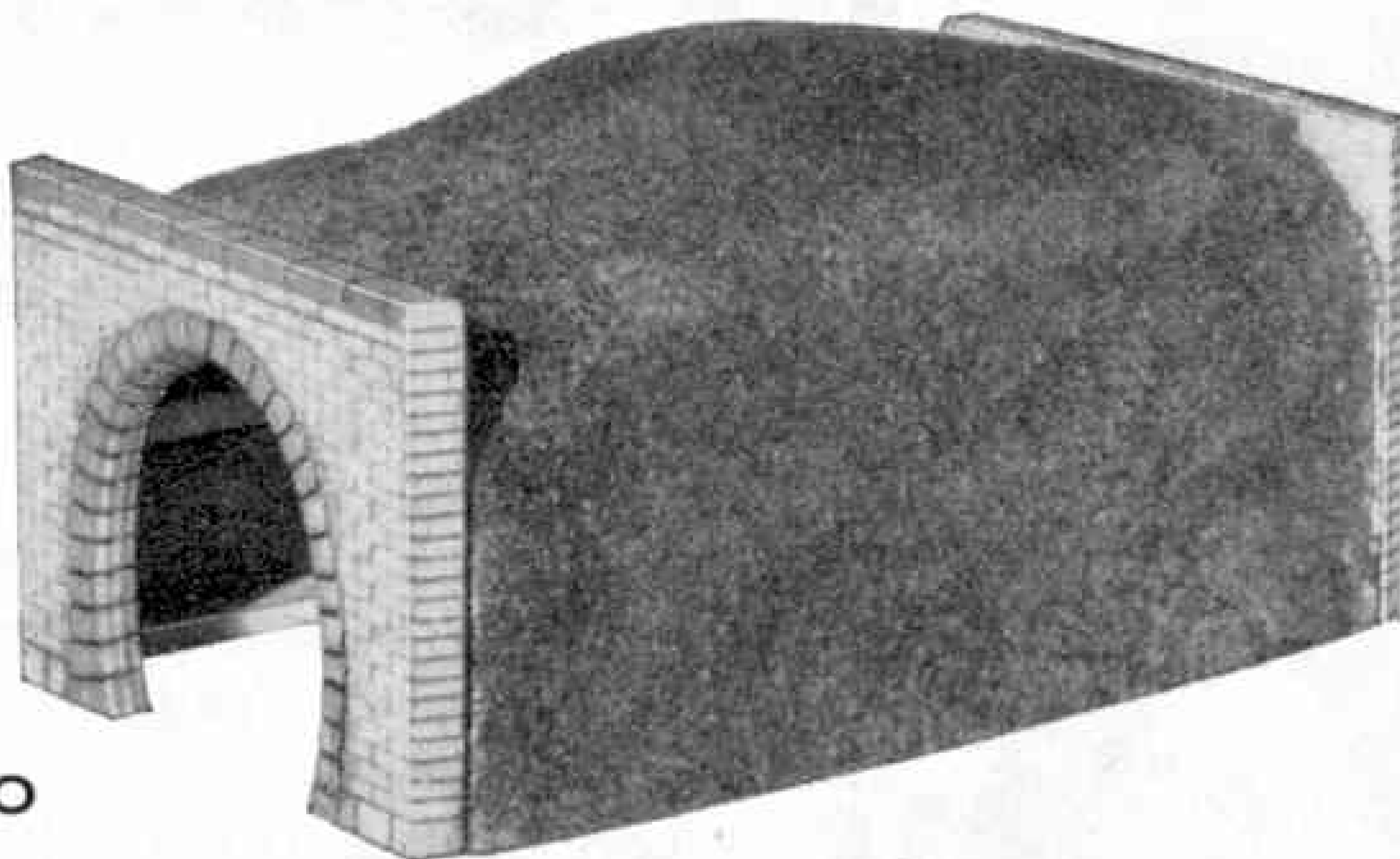
No. 2701 Straight Rail	1/5
No. 2710 Curved Rail	1/5
No. 2713 Curved Terminal Rail	3/3



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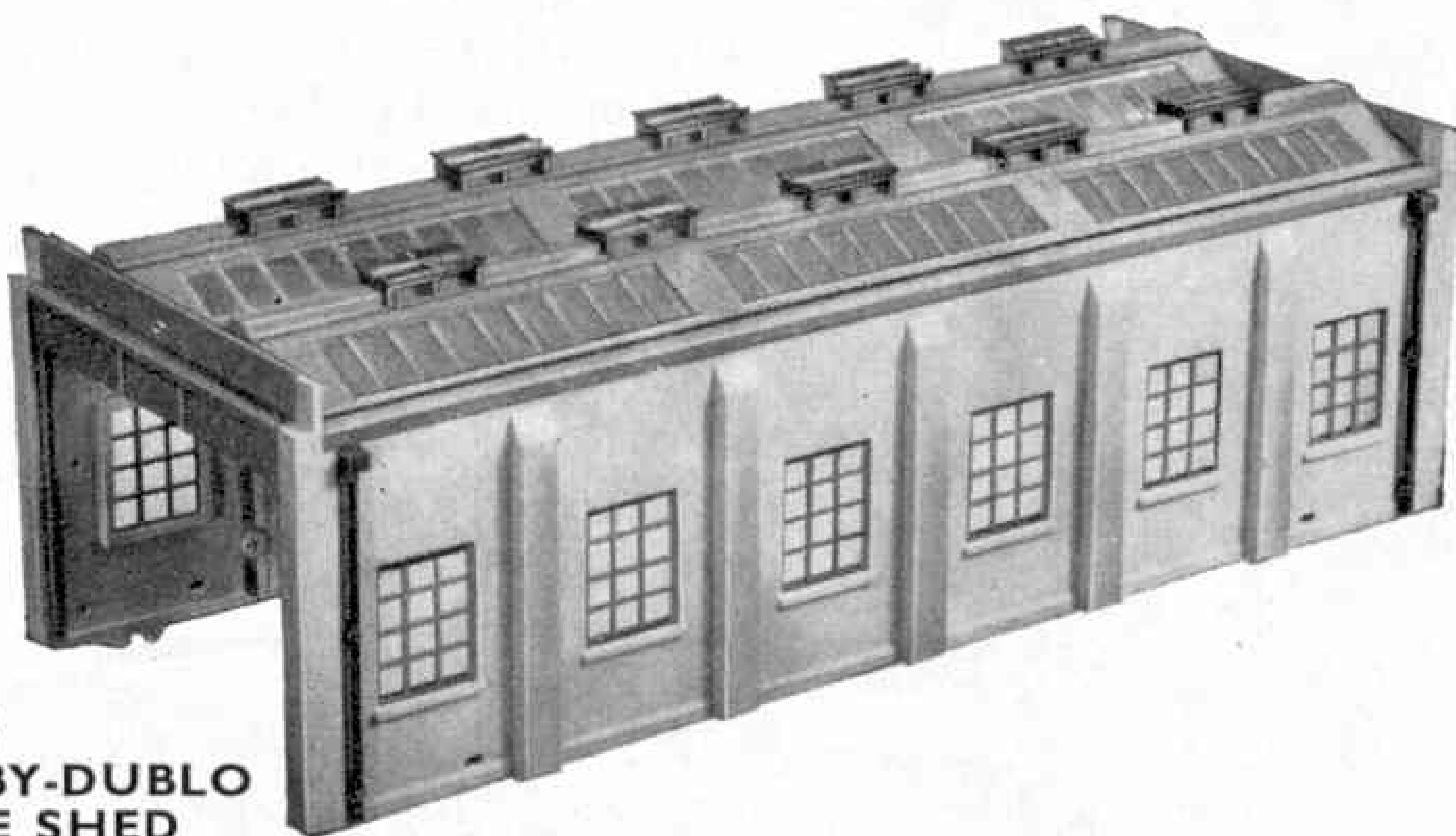
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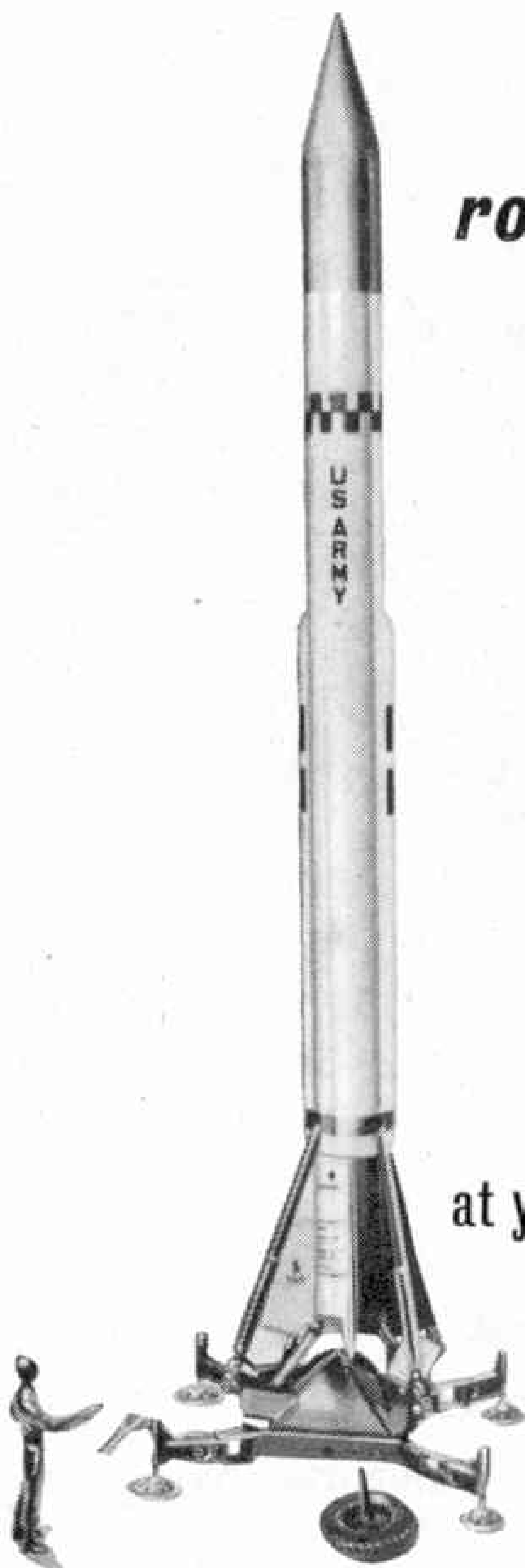
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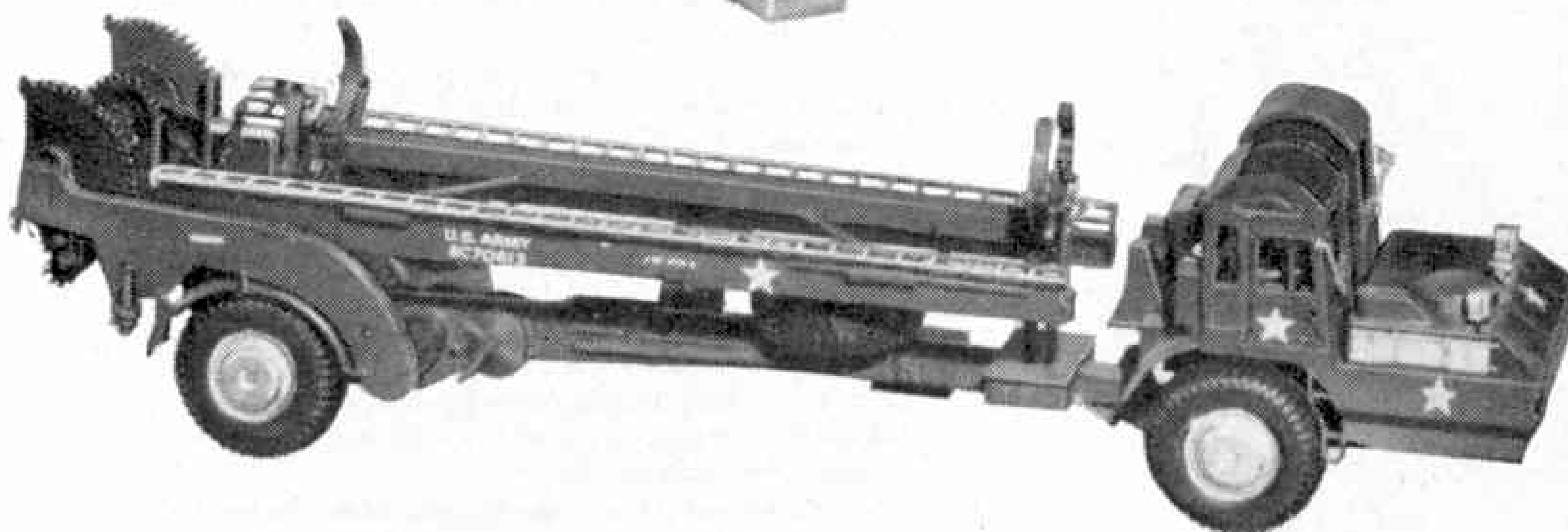
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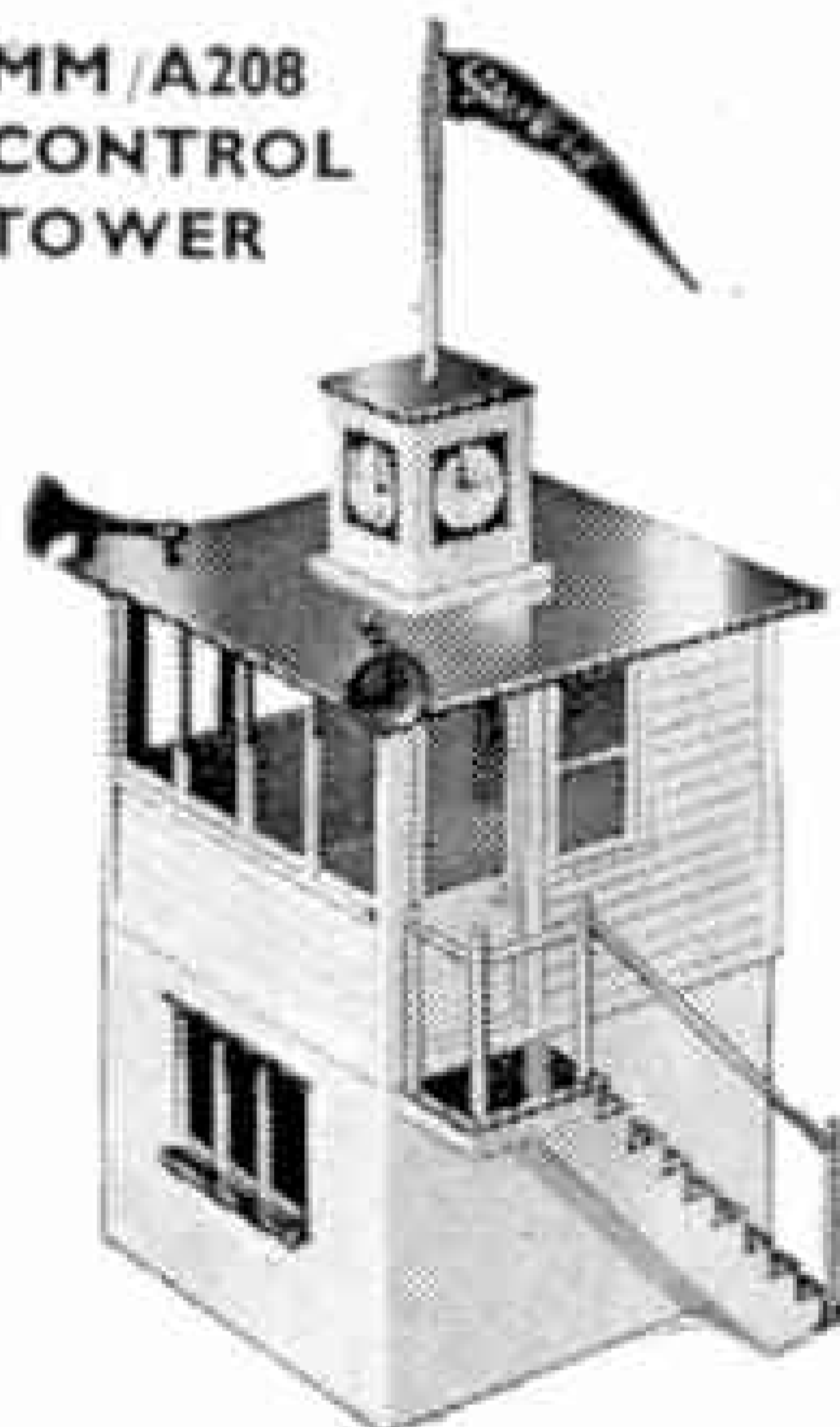
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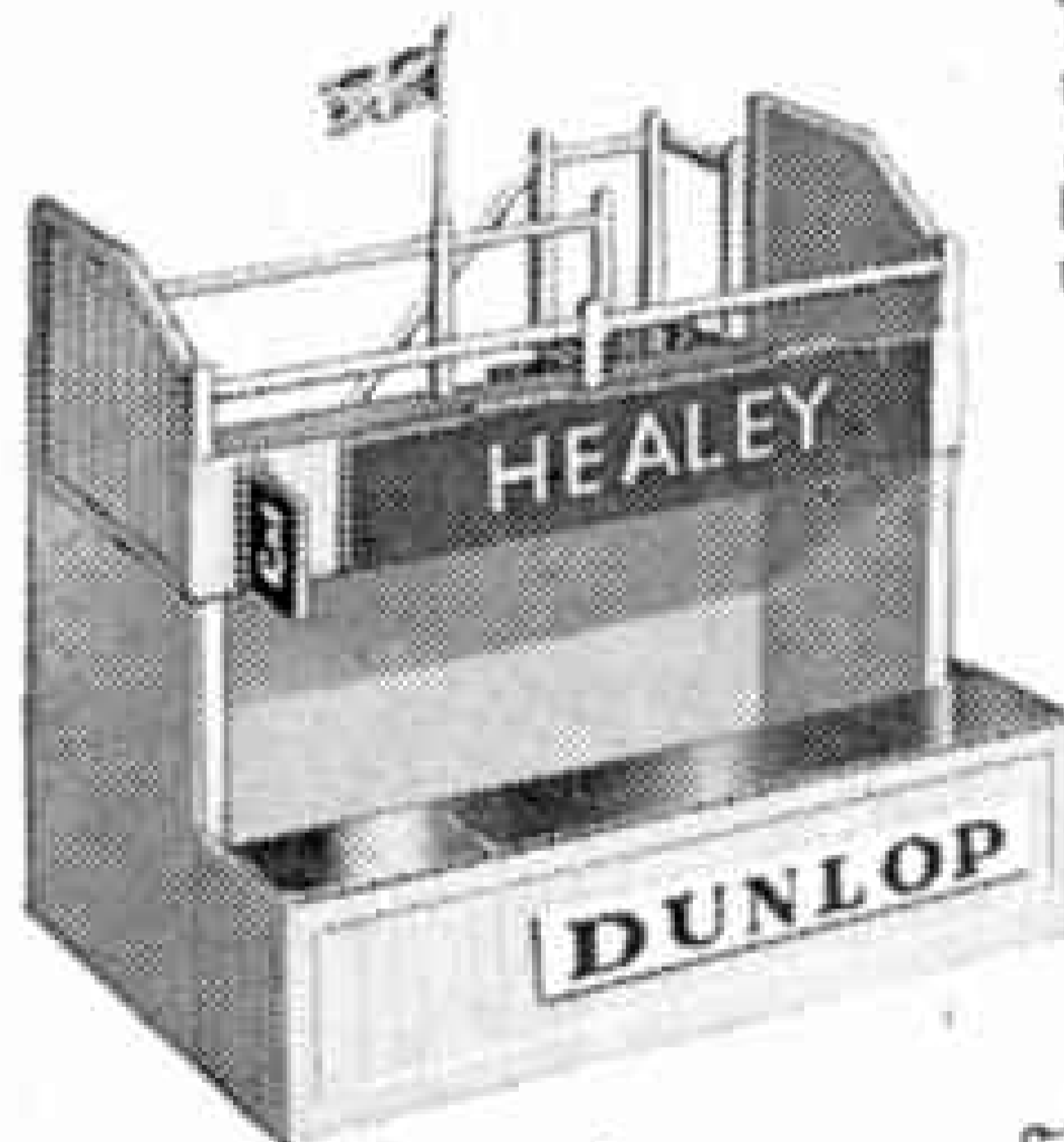
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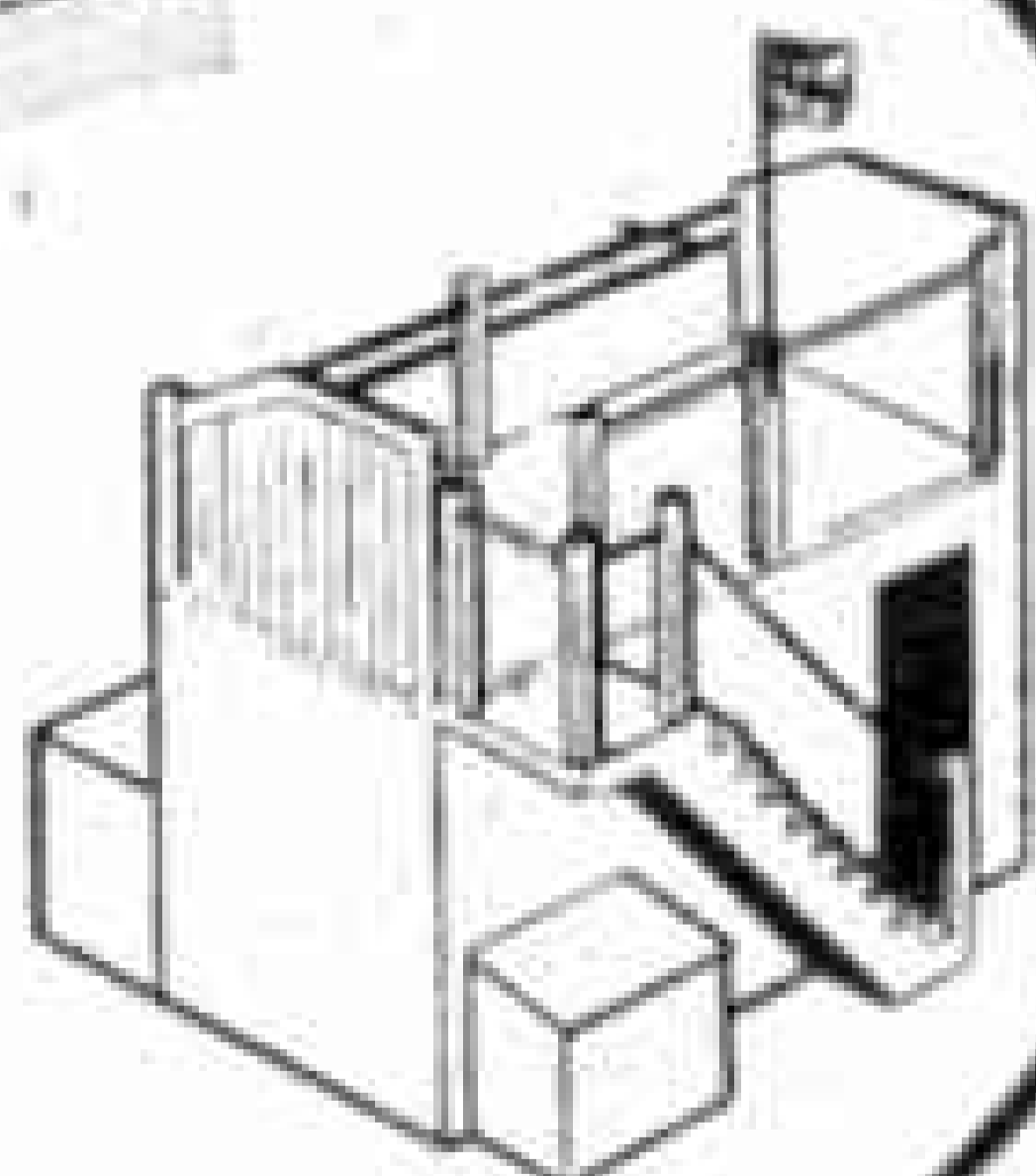
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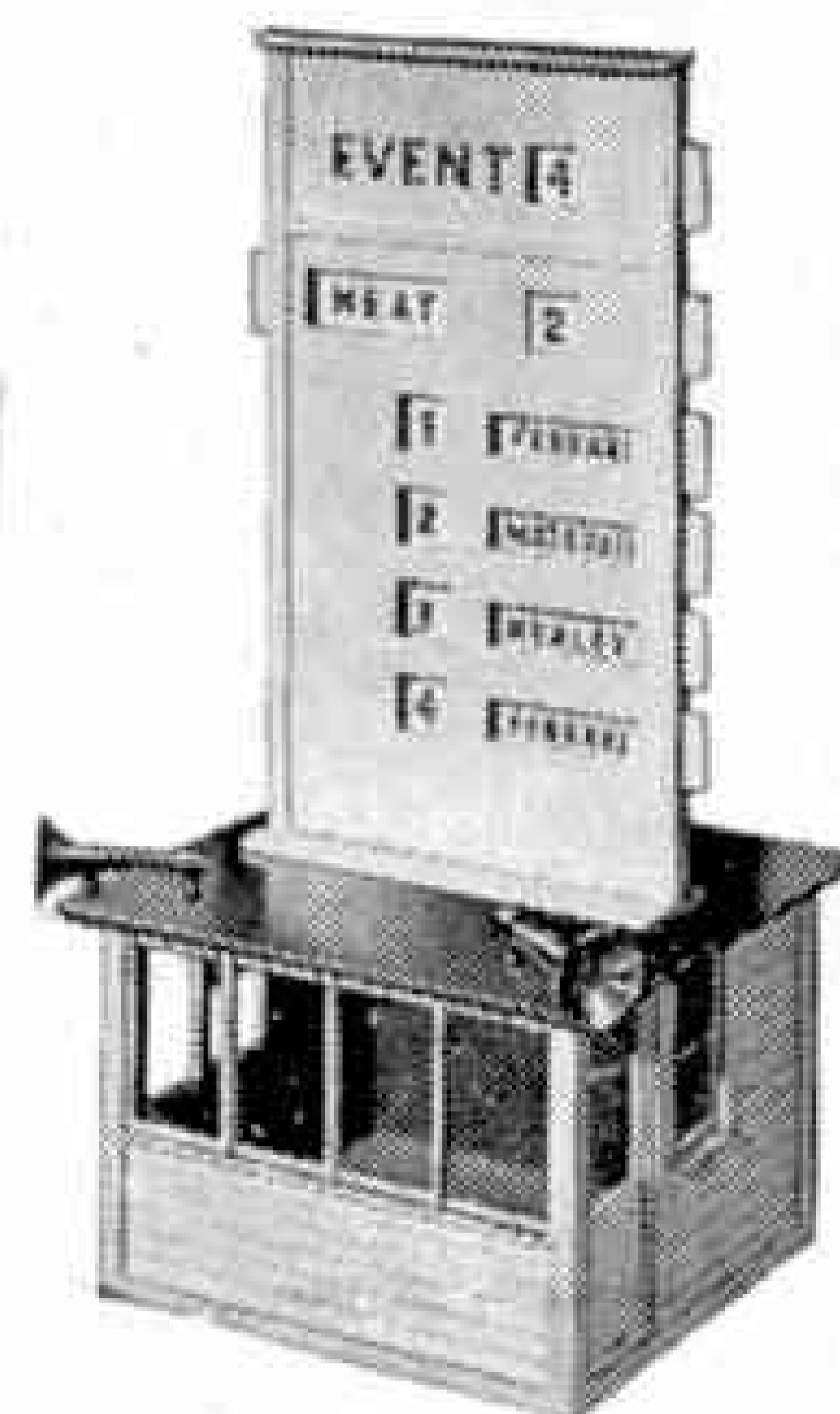


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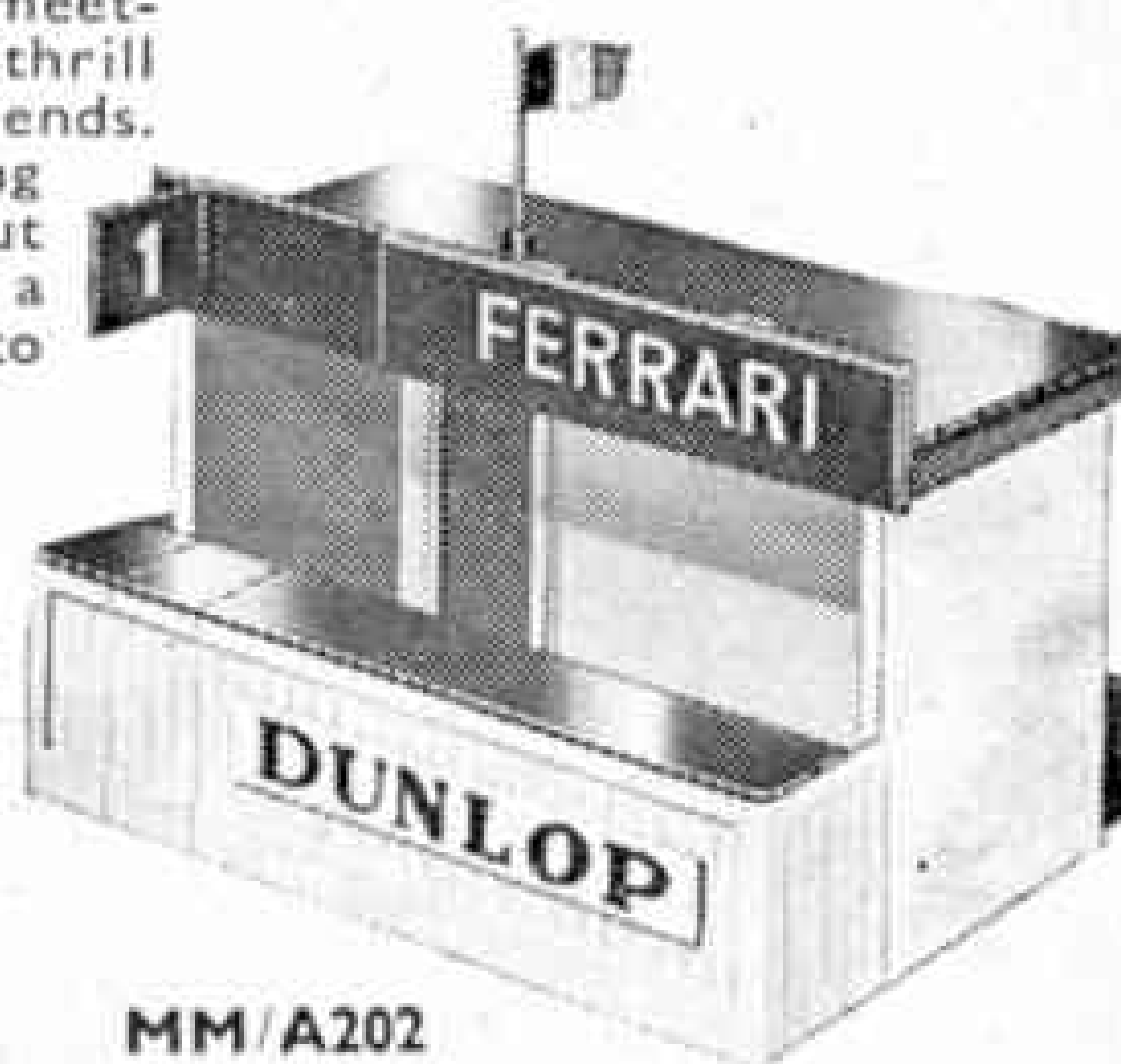
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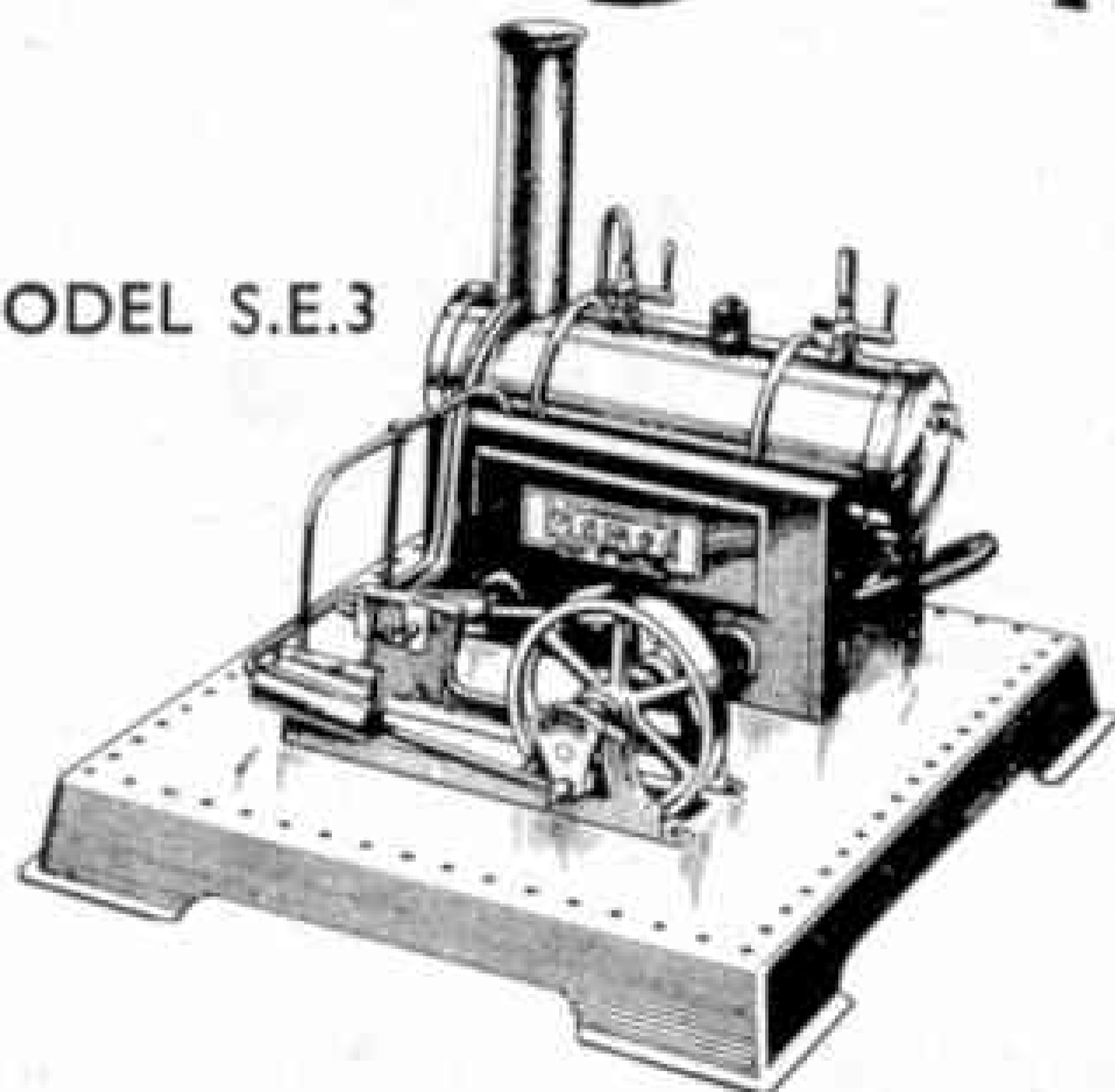
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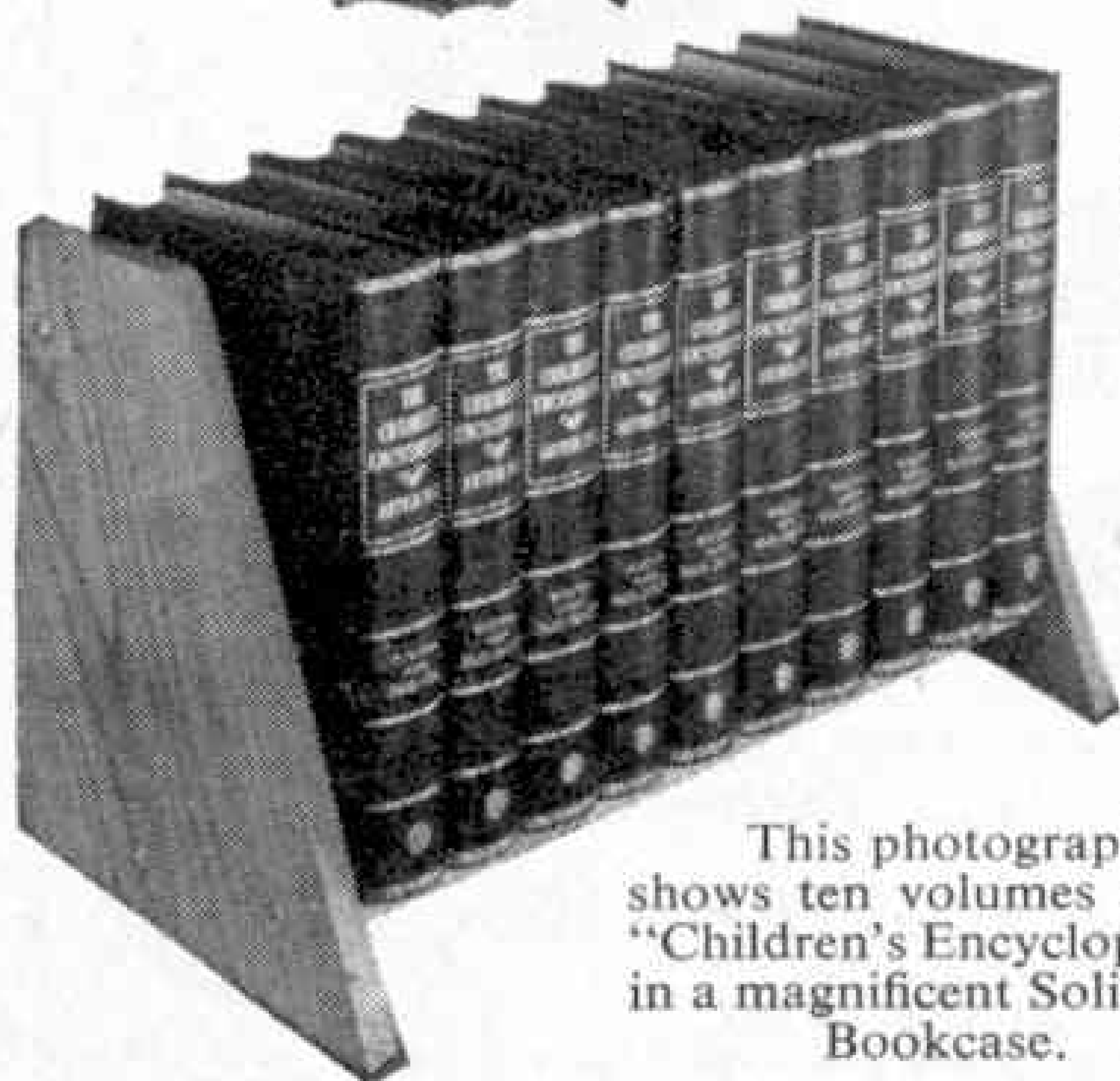


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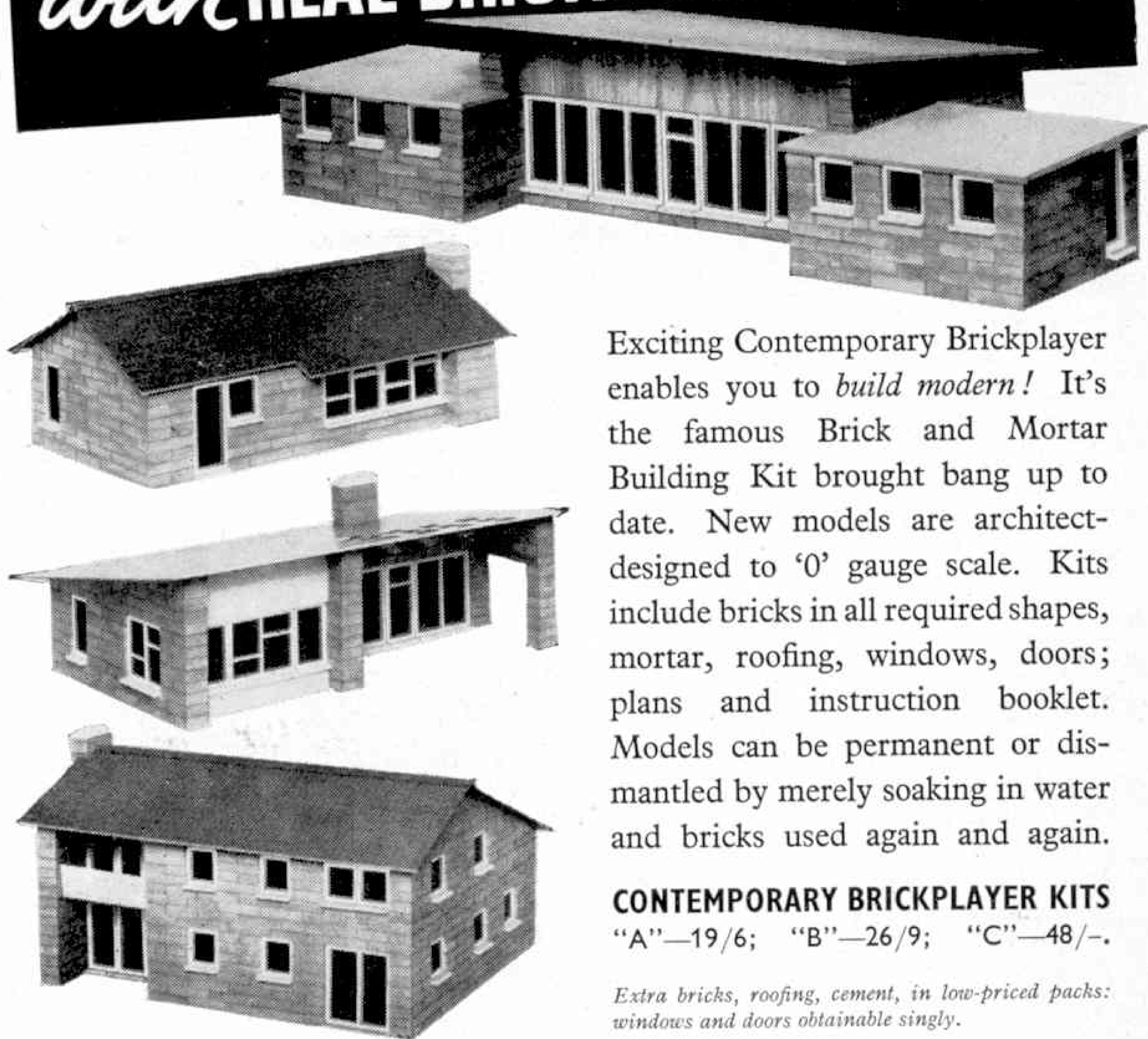
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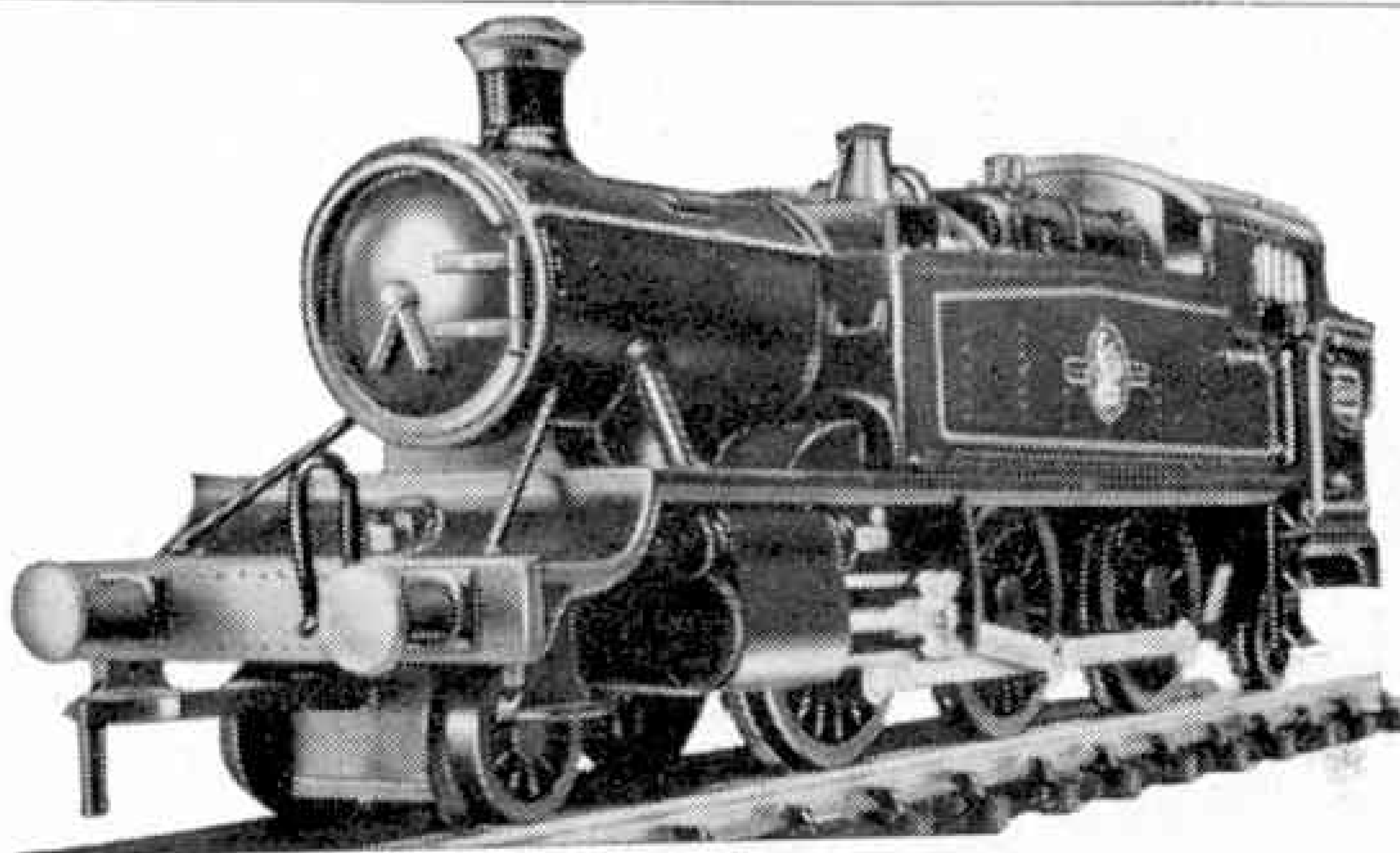
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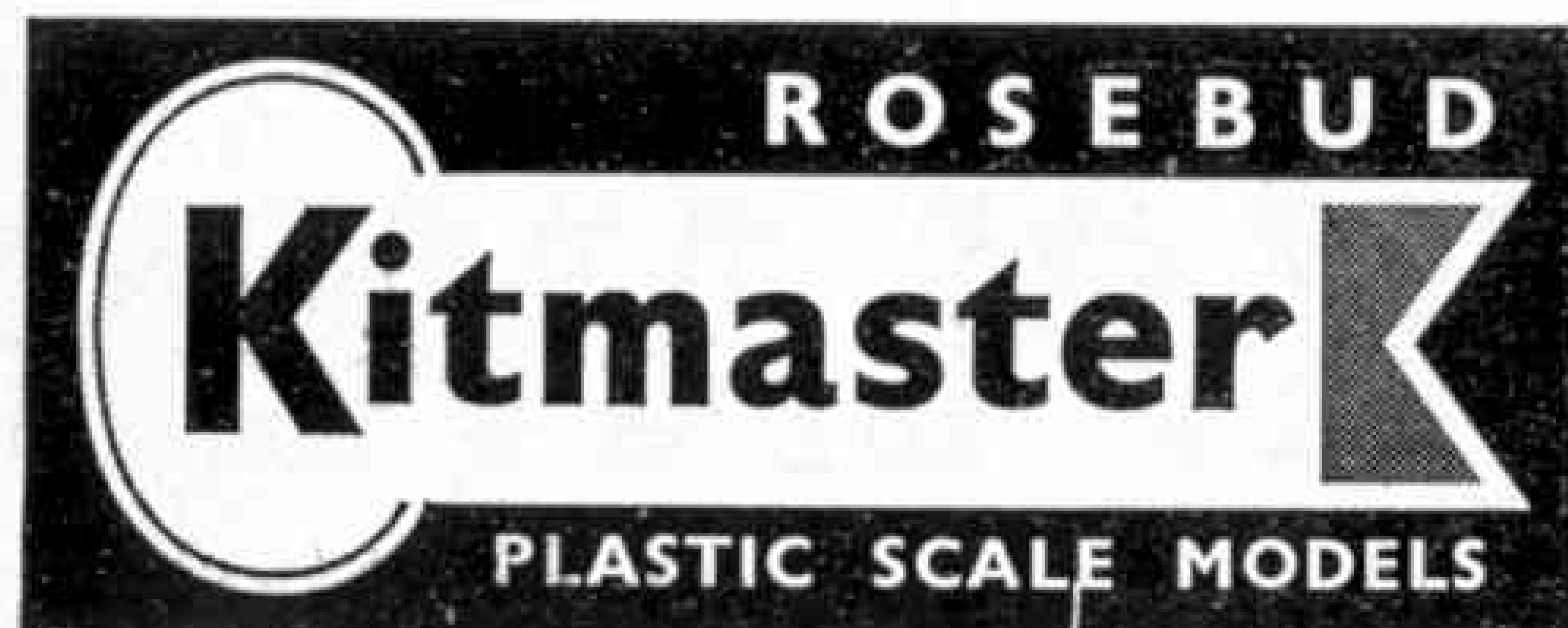


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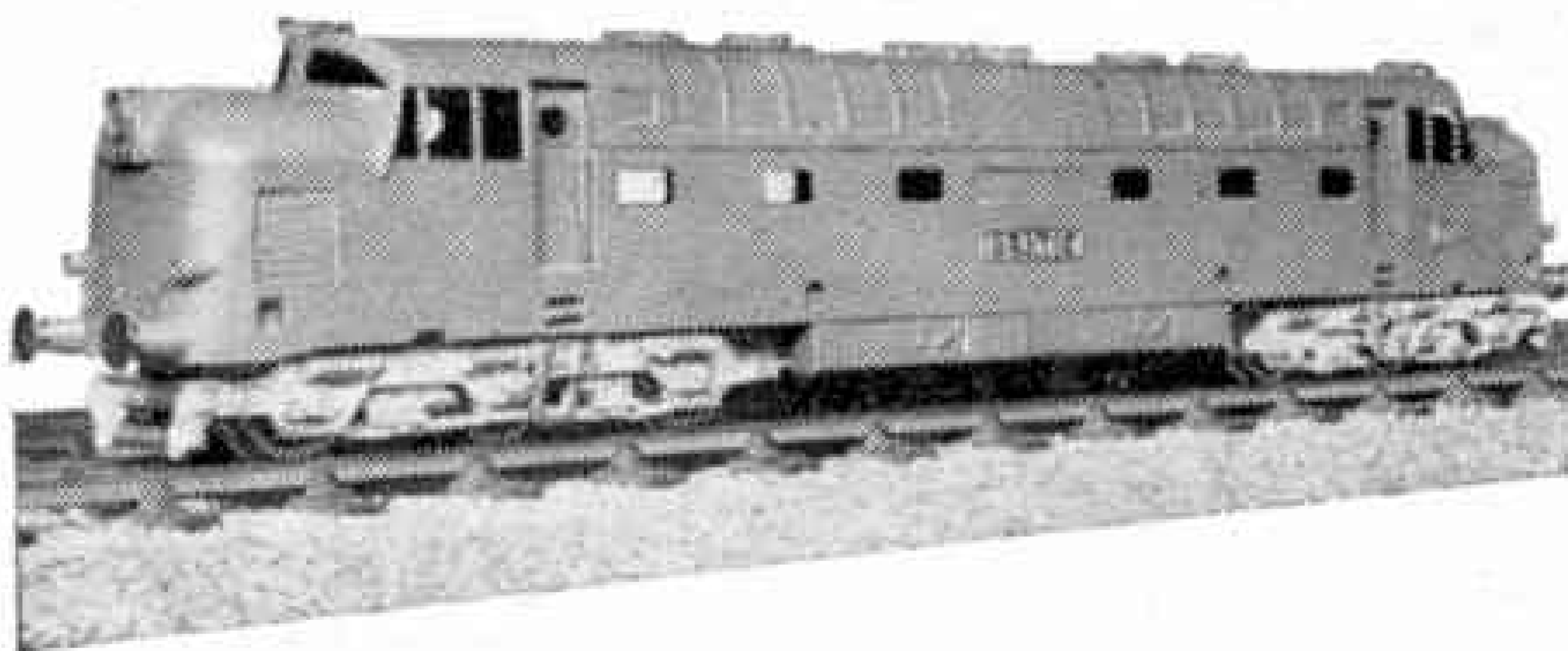
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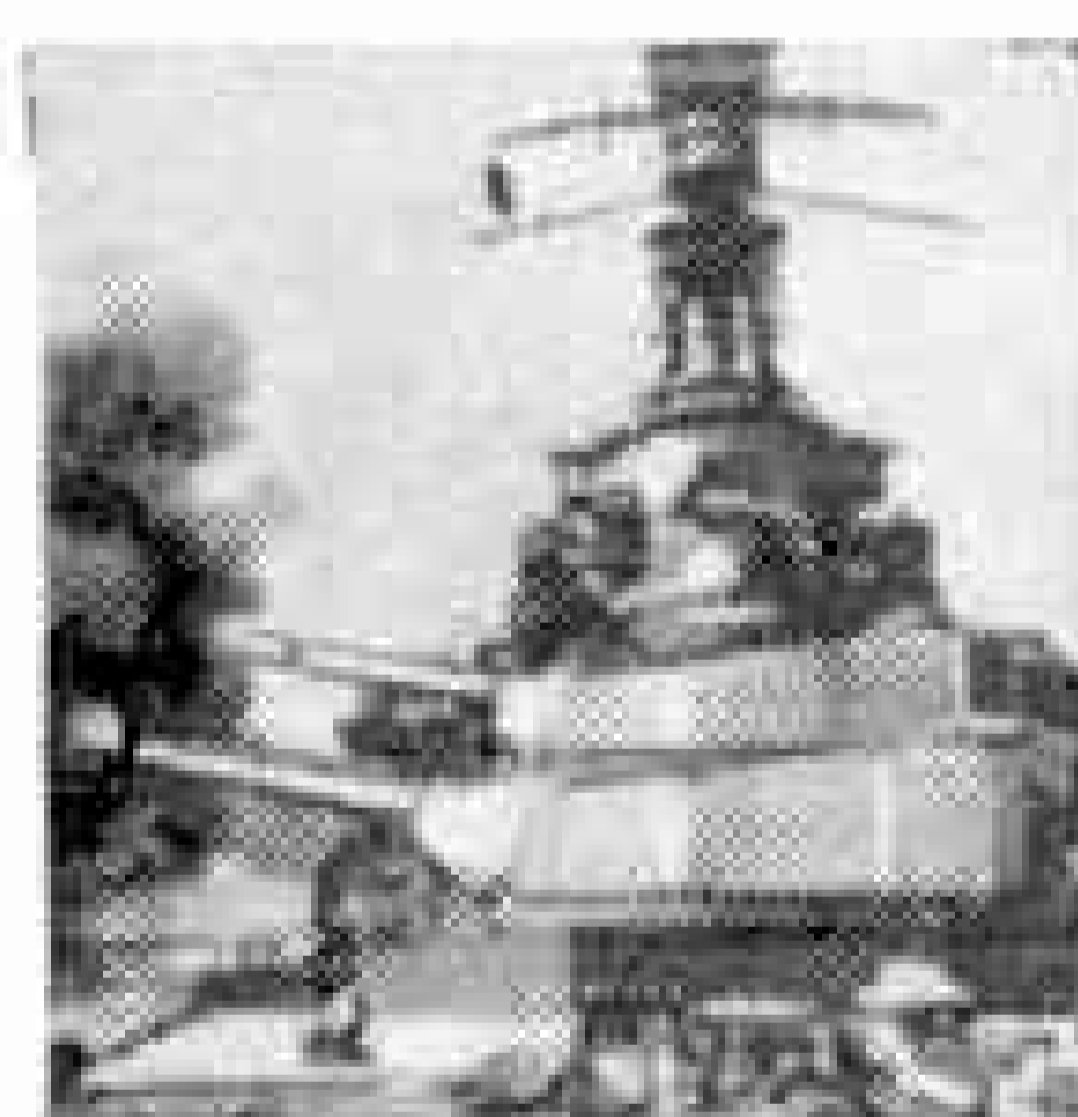
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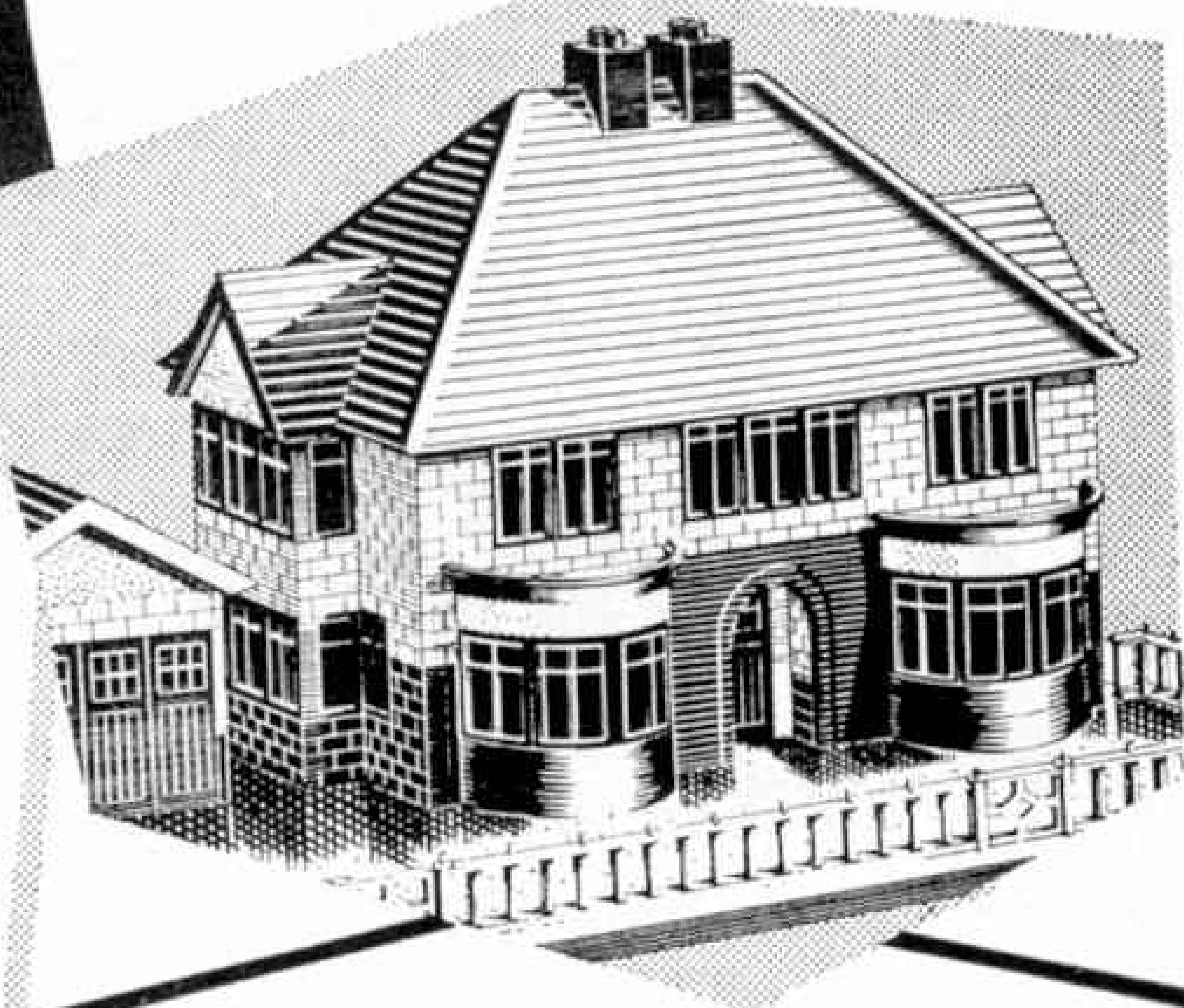
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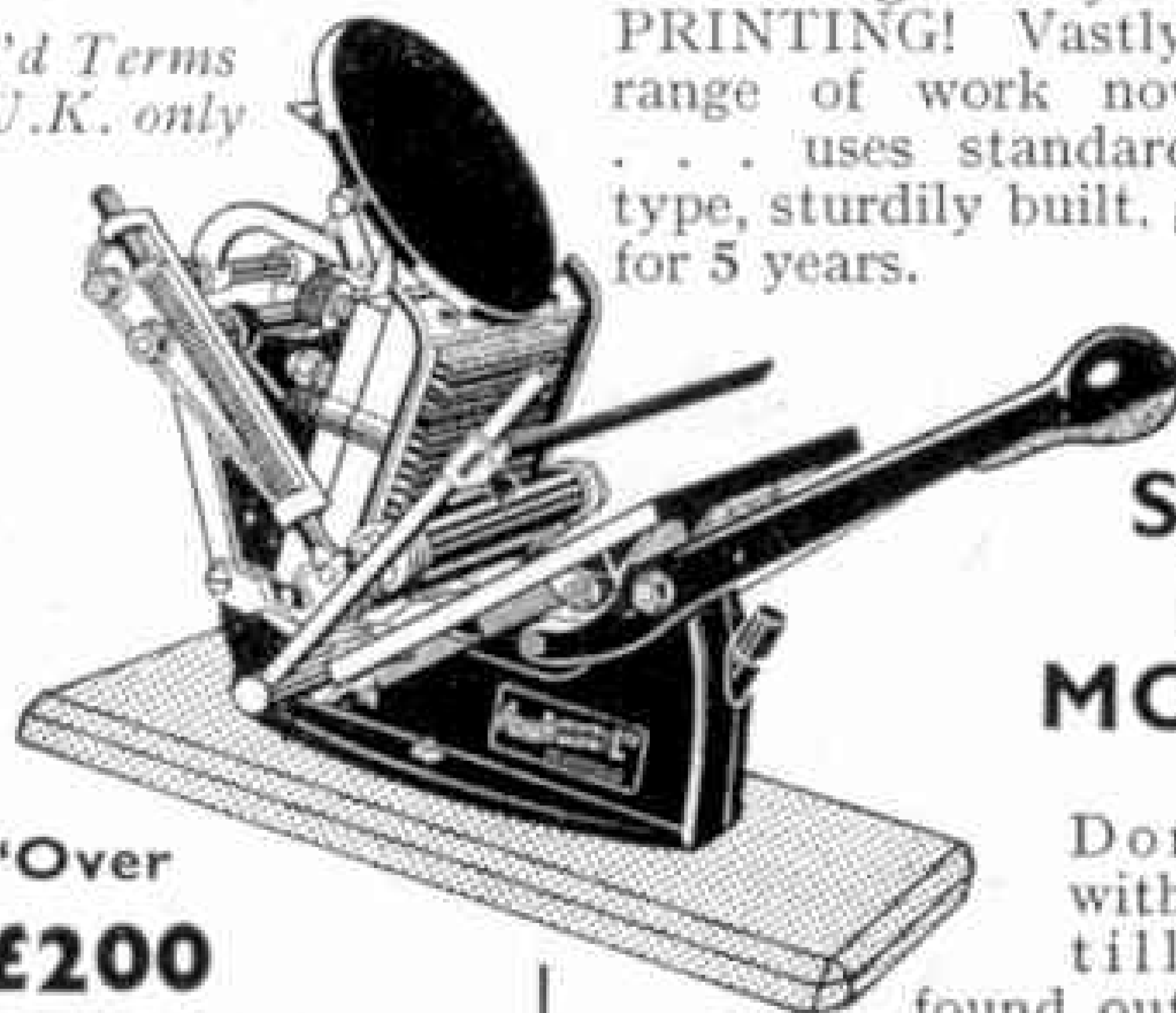
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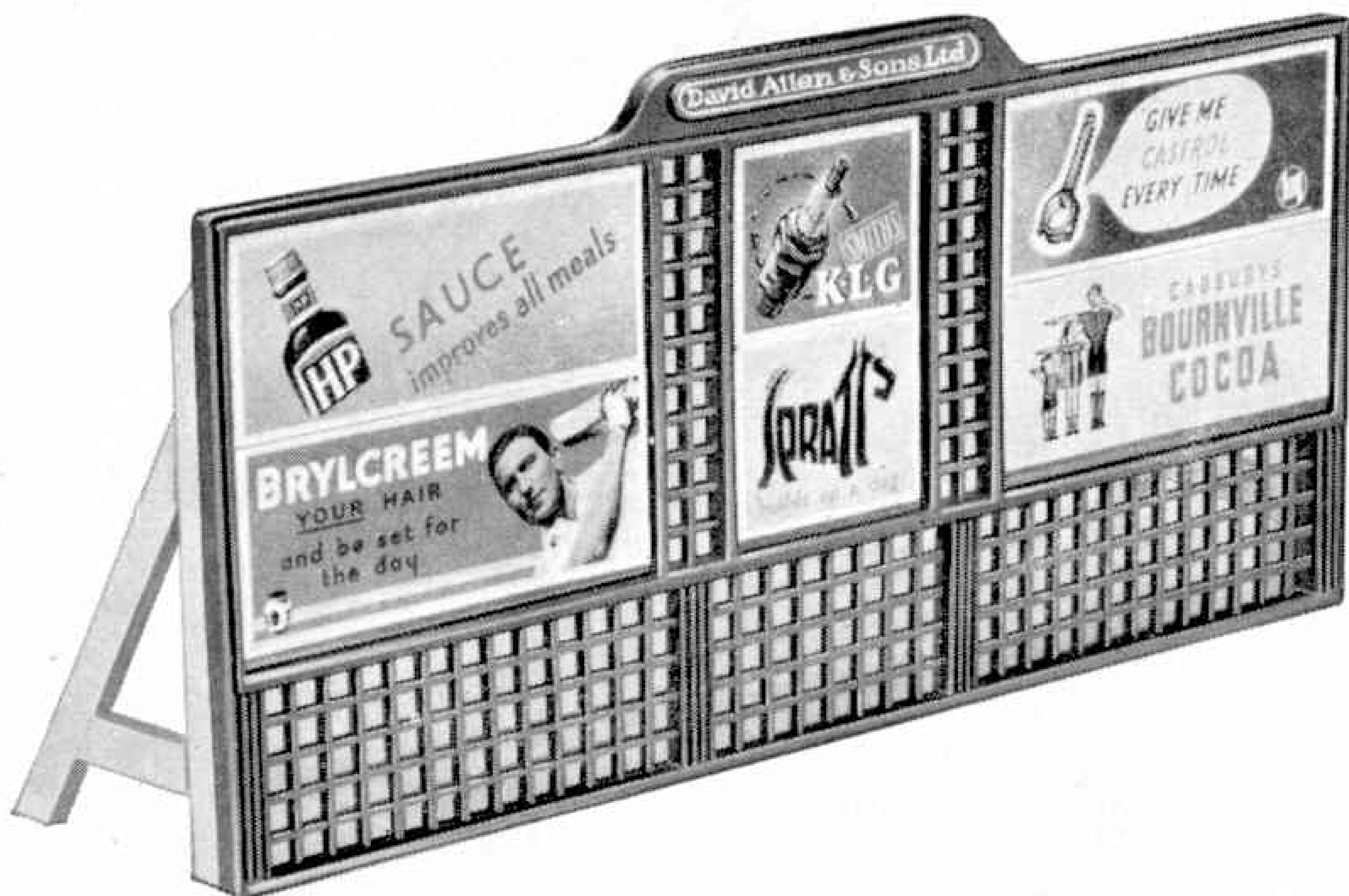
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MECCANO

MAGAZINE

Editorial Office:
Binns Road
Liverpool 13
England

EDITOR : FRANK RILEY, B.Sc.

Vol. XLIV
No. 10
October 1959

Doorstep Monument

WHEN I first saw the photograph from which my picture this month has been reproduced, it seemed to me that there was a good deal of irony in it. Some Bristol readers no doubt will remember

and it is only four years since a suitably inscribed commemoration plaque placed on its wall was unveiled by the then Lord Mayor of Bristol. Now the house is gone, in spite of appeals for its preservation, and in its place there is parking space for six cars.

The photographer to whom I owe my picture, Mr. Reece Winstone, of Bristol, was closely concerned with the fixing on the walls of the house in which Friese-Greene was born of a plaque that recorded it as his birthplace. The inventor's birthday was 7th September, 1855, and the plaque was fixed in position on the centenary of the event it recorded. It was taken down on the demolition of the house, and thanks to the efforts of Mr. Winstone, it has now been set up on the



All that is left of the home of a pioneer—the stone marked by the arrow. It is the doorstep of the house that saw the birth of William Friese-Greene, the inventor of cinematography. Photograph by Reece Winstone, Bristol.

that on the corner site shown in it once stood the large Georgian house in which was born a pioneer whose work developed into one of the greatest pleasures of the last 40 or 50 years—cinema-going. At the moment all that remains on the site as a reminder of its historic character is the doorstep! The spot is marked by the arrow.

The pioneer and inventor born in the graceful Georgian house that formerly stood there was William Friese-Greene,

wall of the Council House, directly below the camera position from which the photograph was taken, for the site is directly opposite the city's Council House.

It had been hoped that this pleasant old-time house would have met a better fate, and it is thought by many that it should have been preserved and converted into a museum for the history of cinematography.

The Editor

The New Indiaman

The World's Longest Bus Service

By the Editor

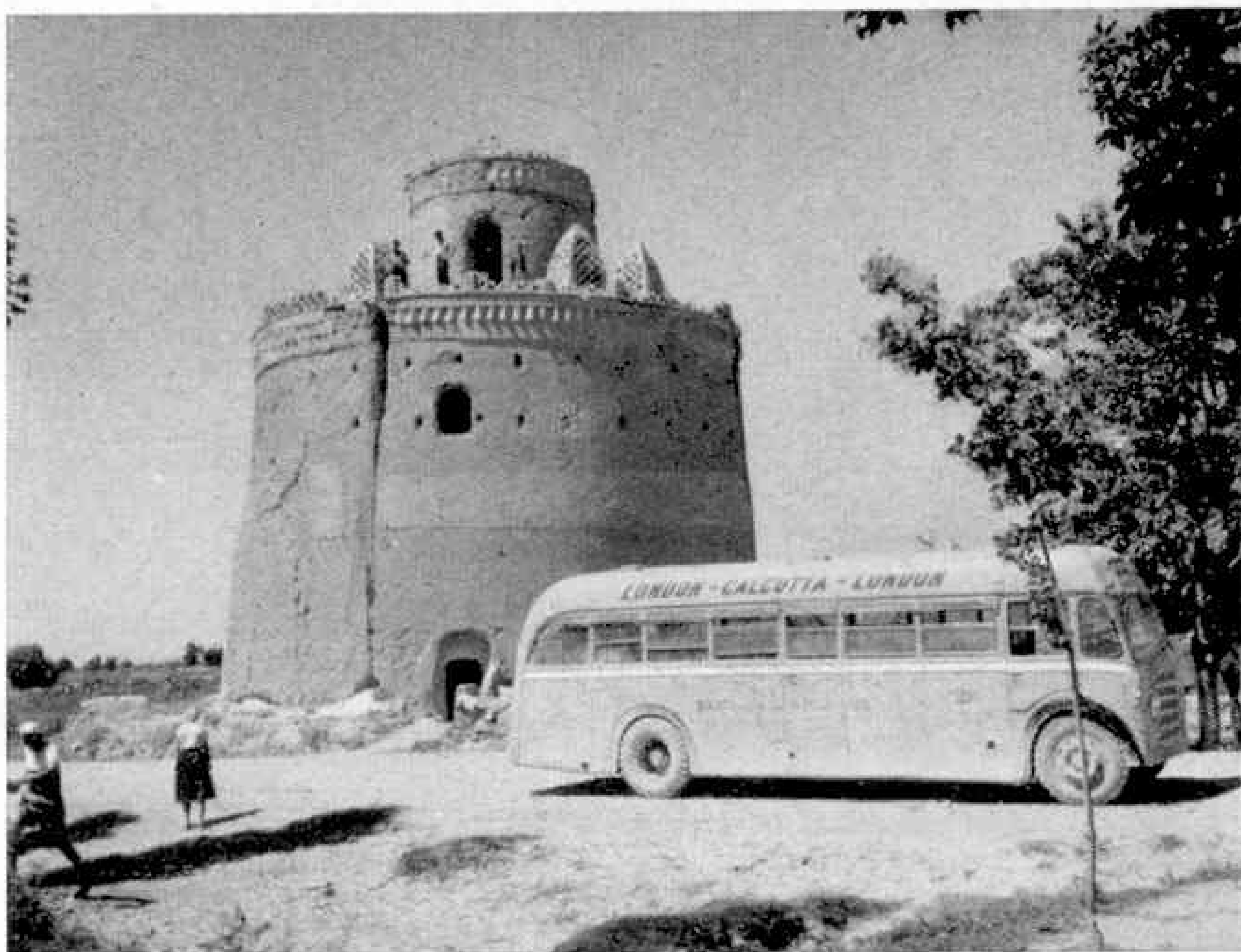
Our cover this month, based on a colour photograph by J. Allan Cash, F.I.B.P., F.R.P.S., shows a veritable lighthouse in the desert. The tall structure seen in it is the Milnader Tower, built over 200 years ago in the southern part of the Dasht-i-Lut desert in Iran, then reputed one of the most dangerous in the world, and on its summit a fire was lit to guide caravans.

Halted near the Tower is "The Indiaman", the bus that provides a service between London and Calcutta. The coaches now maintaining the service have the colour of desert sand; the coach in the picture was the only one that had been painted green. The romantic story of "The Indiaman" is told in the following article.

WHEN most of us board a bus, we are perhaps going down town or returning to the suburbs. Sometimes we may be making a journey to an outlying park or village, or maybe to a neighbouring town or city. We may even be travelling from say Liverpool or Manchester to London and back, or perhaps even farther, to some place in Scotland. Such journeys as the last named of these probably seem mighty long to those who make them, or have only made shorter ones, but they look small indeed when compared with the travel of the bus seen on the cover of this month's *M.M.*, with the lettering *London-Calcutta* on its sides. That bus makes a round journey of 20,000 miles!

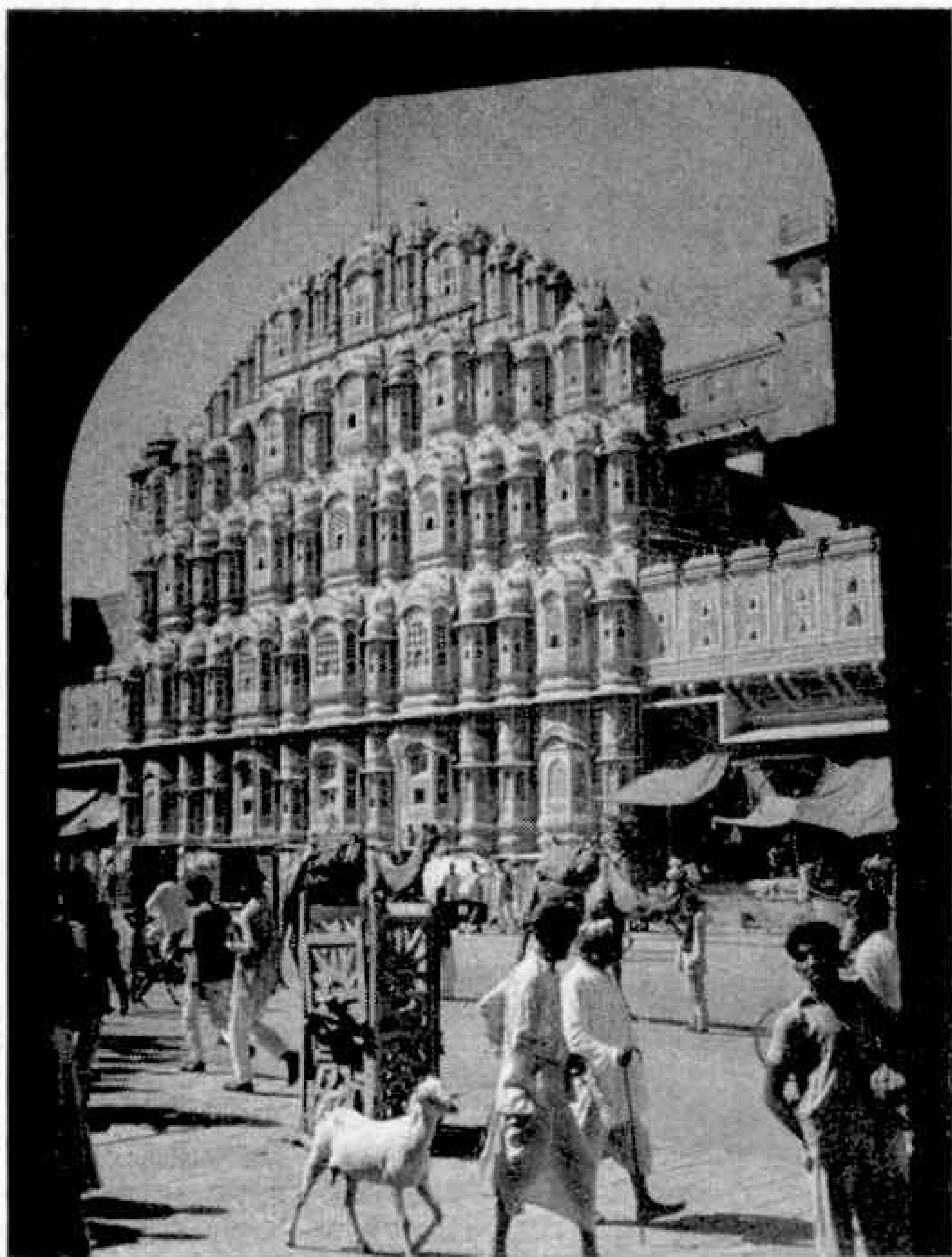
Needless to say, the passengers on this fantastic land journey do not precisely live in the bus night and day, seated in quiet and orderly fashion on one seat throughout. With so many exciting places to pass through between England and India it is impossible to avoid staying at many of them long enough to allow passengers to explore them and to see something of their peoples and the lives they live.

Travelling, stopping and sight-seeing indeed provide the keynote of the journey, which covers ground that is historic as well as novel to most of the passengers.



The Indiaman in Iran, near a grain silo built of brick and mud. This illustration, and the lower one on the opposite page, are from photographs by O. J. Garrow-Fisher.

Their journey takes them through Brussels and Paris to Cannes, on the Riviera. Next day they drive leisurely along the Mediterranean coast to see Genoa's harbour and marble palaces. Venice is the next stop, and then the bus traverses the Balkans, through Belgrade, in Jugoslavia, and Sofia, in Bulgaria, before reaching the edge of Europe at Istanbul, once called Constantinople and earlier still Byzantium, one of the world's most historic cities.



The Hawa Mahal, or Hall of the Winds, is in Jaipur, India. Photograph by courtesy of the Indian Tourist Office.

than settled country, still halting at places of intense interest, to enter Pakistan on the forty-eighth day or so of the tour.

Pakistan and India! These two names summon up pictures of wonderful cities, deep jungles and strange and interesting peoples, and the traveller in the bus is not disappointed, for there is a lengthy run still before Calcutta is reached, with stops at Karachi, Lahore, Delhi and other wonderful towns and cities. The remotest glimpse of history is provided by Mohenjo-Daro, where the ruins can be seen of the cities of a highly civilised race that peopled the Indus Valley in pre-historic days, 5,000 years or more ago.

Who runs this amazing bus service, and how did it start? Whoever had this brilliant idea deserves some memorial, and I believe he finds it in the minds of those who travel with him, who in their journeys become very well-known indeed to him. Anything

Three days can be devoted to sight-seeing in Istanbul, and then the bus crosses the Bosphorus to plunge into Asia Minor. There halts are made at Ankara, capital of modern Turkey, and at Adana, which is near the site of Tarsus, the city of St. Paul. The route runs on, first down to the Mediterranean coast at Latakia and then onward through Lebanon to the holy ground of Palestine, where Jerusalem, another city with a lengthy and fascinating story, is one of the stopping places.

The scene now changes. Across Iraq and Iran, and on to Pakistan and India, the adventurers cross more desert land

may happen on such a long land voyage, and those who venture on it accept cheerfully any discomfort that may arise, whether caused by a dust storm in the desert or by such a misfortune as sticking in the mud of some primitive road or sinking in loose sand in a desert. Discomforts of this kind are little in



The Indiaman in a temporary difficulty. It is seen here stuck in the mud in Sind, Pakistan.

The Indiaman caught in the sand of an Iranian desert. With the aid of sand channels, passengers and helpful local peasants, it was soon on the move again. Photograph by J. Allan Cash.

comparison with the wonders of such a journey.

The man who has brought this rich experience to so many is Paddy Garrow-Fisher, who thought up the idea of a tourist coach service when he was travelling through Eastern Europe as a salesman. He soon found the coach he wanted. It was

Lama, belonging to Valiant Coaches, Ealing, which was sold to him by the firm, the head of which was deeply interested in his scheme. *Lama* was a 1949 A.E.C. Regent with a Harrington body. After overhaul at the A.E.C. works and fitting out for its novel and arduous task, it became the first *Indiaman*. Other buses have followed, maintaining a regular service, but *Lama* will always be notable as the pioneer of what must be the longest coach service in the world.

This was in 1957 and the experience gained with *Lama* served to show what is needed in a bus to carry out this grand tour. In designing *The New Indiaman*, Mr. Garrow-Fisher has had the co-operation of A.E.C. and Harrington's, who between them have provided him with an A.E.C. Mandator with a wheelbase of 16 ft 7 in. This is fitted with the well-tried A.E.C. 11.3 litre diesel engine, which develops 150 brake horse power. It has a six-speed overdrive constant mesh gear-box, so that there is ample power for low gear work in mountainous country or in deep sand as well as capability of high cruising speed. Westinghouse compressed air brakes and Ashanco exhaust brakes provide for complete safety on the many long mountain descents encountered en route.

The Mandator is a lorry chassis, and was selected instead of a normal bus chassis because of its high ground clearance, strength and power. The owner had



already decided that air conditioning was absolutely necessary. Fortunately Harrington's had already co-operated with Normalair Ltd., of Yeovil, in developing this desirable feature, so there was no difficulty in providing it.

There are excellent Shell service facilities at all major cities along the tour of *The Indiaman*, but for long distances hot dusty country is crossed, and because of that chassis points needing lubrication had to be protected from its entry and that of water. So a special automatic lubrication system was fitted.

Tyres are a problem on a journey of the kind undertaken by *The Indiaman*, in which conditions vary from smooth roads in most of Western Europe to sand and stony tracks in many parts of the Middle East, to say nothing of variations in temperature. When crossing sand the tyres had to be deflated, so it was necessary to have inflation gear driven by the engine to restore normal pressure when a harder road surface was met.

In this specially designed and fully air conditioned coach there is accommodation for 26 passengers, a courier and two drivers. It includes a kitchen at the rear, and this is equipped with Bottogas cooking equipment and an Espresso unit for coffee, tea and boiled water. A stainless steel sink is included, and ample storage space is provided for all necessary cooking utensils.

Hydrofoil Craft

By Ian Bruce

A RECENT announcement that Saunders-Roe Limited had developed a hydrofoil craft for the Royal Canadian Navy has focused attention once more on this type of marine design. The normal vessel of today receives its support through the displacement of water by its hull, which gives it what is called buoyancy or static lift. This method is very ancient, certainly over 5,000 years old, and it was not until the beginning of this century that experiments in the use of dynamic lift in water craft were started. Since then boats have been designed and constructed in which lift resulted from the reaction of the water deflected from their flat bottom. Such vessels glide upon the water surface, and, of course, water resistance to their progress is greatly reduced at higher speeds.

Strangely enough, neither the displacement nor the gliding type of vessel served to solve the problem of constructing a high-speed craft that is truly seaworthy. The so-called gliding boats, requiring comparatively small propulsion power, are not seaworthy, while the displacement boat, which generally has good sea-going qualities can attain high speed only with extremely powerful engines, which are very expensive to operate. The solution seemed to come with experiments in which the hull of a boat was lifted out of the water *when under way* by means of partially or wholly lift-creating surfaces or foils. This gave us the modern hydrofoil craft.

To understand how the hydrofoil works, it is best to draw a comparison with its close relation the aerofoil or, in other words, the wing of an aeroplane. The latter generates lift because the air flow passing over it cause changes of pressure on the top and

bottom surfaces, and these in turn produce a resultant force in an upward direction. The hydrofoil—or, if you like, the underwater wing—works in just the same way, with the difference of course, that the air flow has been replaced by water flow. Since water is roughly 800 times more dense than air, the lift per unit area of “wing” at any particular speed is 800 times greater in water than in air. Consequently, the hydrofoil can be made much smaller in area than an aerofoil to lift the same weight.

Unlike the conventional type of ship, that is vessels gaining their support purely from water displacement, hydrofoil craft obtain their support when travelling through the water by the lifting power exerted by the immersed hydrofoils. These foils or



“Bras d’Or”, the Saunders-Roe hydrofoil craft at speed during trials. Note how the hull of the boat is lifted out of the water. Photograph by courtesy of Saunders-Roe (Anglesey) Ltd.

streamlined planes are attached to the undersurface of a vessel’s hull. As a result of the lift obtained from the foils, when the boat moves forward through the water the hull is gradually lifted out of the water as the speed increases, until eventually the entire hull is lifted clear of the water, the foils only remaining in this element. The water resistance is thereby reduced by about half and, at the same time, the braking



The Supramar hydrofoil vessel travelling fast with only its hydrofoils immersed in the water. Photograph Supramar A.G.

action of waves upon the hull is almost entirely eliminated.

One or two names stand out in the history of hydrofoil craft, but undoubtedly we owe the greatest debt to two Canadians, Alexander Graham Bell and F. W. (Casey) Baldwin. In 1919 they designed and built an amazing craft, driven by two 350 h.p. aero-engines which propelled the boat at speeds in excess of 70 m.p.h. Known as the HD/4, this vessel was the first true hydrofoil craft. When the HD/4 was driven successfully at a speed of 70.86 m.p.h. on the great Bras d'Or lake in Nova Scotia, it showed itself to be the fastest boat in the world at that time. When the Defence Research Board of Canada decided to recommence trials where Bell and Baldwin had left off, the Saunders-Roe Group—with their experience in aircraft construction and boat building—were asked to design and build the new craft. Very appropriately the new boat has been named *Bras d'Or*.

It is on the Continent that hydrofoil craft have enjoyed the greatest popularity, however. In 1927 Frhr. Hanns von Schertel started basic experiments for the evolution of a new and seaworthy type of speedboat. Following tests with seven different boats, he arrived at a practical solution. Thereafter, in co-operation with the Gebr. Sachsenberg Shipyard at Dessau-Rosslau, now under Russian control, research work and practical trials were continued on a large scale. As a result of this activity, seven hydrofoil craft of the Schertel-Sachsenberg system were completed ready for service. These vessels were tried out over a period of eight years on lakes and rivers, and in the Baltic Sea, and were

constantly improved. In the long trips they undertook they proved their superiority over other boats, as well as their seaworthiness.

The second World War, and conditions during the post-war years, prevented the commercial exploitation of these achievements. It was also impossible to put into practice during that period the latest ideas and results of later research work, which far surpassed the technical standard achieved in previous boats. Eventually, after an interruption of about seven years, the first hydrofoil boat to be built after the war, embodying all the previous experience and latest knowledge, was constructed by a newly created company in Switzerland, Supramar Limited Zug.

This craft was designed for passenger service on inland waters and had a top speed of 53 m.p.h. Following extensive tests and various demonstration trips on Lake Lucerne, the boat was incorporated into the joint fleet of the official Swiss and Italian Steamship and Navigation Company of Lake Maggiore, where it was put into the daily international passenger service between Locarno-Pallanza and Arona. Thus, for the very first time in the history of shipping, a hydrofoil boat was used for regular passenger transport. The craft was named *Freccia d'Oro*, which means Golden Arrow. On its scheduled services during the summer seasons 1953 and 1954, *Freccia d'Oro* covered more than 30,000 miles and carried well over 25,000 passengers.

The stability enjoyed by hydrofoil boats is much greater than that of any ordinary type of surface vessel. They are easy to handle and, contrary to the action



Another view of the Supramar craft. Photograph Supramar A.G.

of an ordinary craft, which heels outwards when turning, hydrofoil boats heel, or bank, inwards. When travelling at slow speeds the hydrofoils have a dampening effect in rough water. As speed increases, the hull rises gradually and quite smoothly out of the water and, thereafter, travels freely through the air, with only the hydrofoils still immersed, and at a pre-determined height above the surface of the water.

Experience has shown that the motion of hydrofoil craft in a seaway is considerably less than that of any other type of surface craft. In rough water, the craft behaves just as powered *aircraft* do in bumpy air; both react the less to disturbed conditions the faster they travel. The ordinary displacement boat does not, of course, possess this advantage. It is rather comparable to an *airship* which, floating through its medium, is constantly at the mercy of the air waves buffeting against its hull.

Compared to other types of speedboats of equal size, hydrofoil boats possess many important advantages. For instance, only half the engine power is required to attain the same speed. Fuel consumption is reduced by as much as half, and consequently the cruising range is nearly doubled. Economy in fuel, as well as the possibility of covering an increased daily distance as a result of much higher speeds, results in a reduction of about 30 per cent in operating costs.

Again the motion of hydrofoil boats in

rough water is much less and they are able to maintain their maximum speed under conditions that would force other types of craft to slow down considerably. Further, even at maximum speed, bow waves and wash created by the craft are so small that narrow rivers, canals and congested waters can be traversed at high speed without danger to embankments or moored vessels.

Hydrofoil craft show high acceleration and quite remarkable stopping power. Without influencing their cruising qualities when travelling in the emerged state over the surface of the water, the length to beam ratio can be altered within wide limits so that the boats can be designed for a variety of purposes. And finally, the motion in rough water is negligible, and too small to cause sea-sickness.

The launching of the *Bras d'Or* at Beaumaris is a sign that boat builders in Great Britain, inspired by Canadian interest, certainly possess the necessary know-how to build successful hydrofoil craft. Let us hope that this Commonwealth venture will lead to the birth of a new era in boat building both in Canada and Britain. As new and more powerful power plants become available for ships, there seems no reason why the day should not dawn when a hydrofoil liner sets out across the broad oceans of the world. Britain, as a leading maritime power, cannot afford to ignore such a significant challenge as this new form of transport offers.

Road and Track—(Continued from page 439)
the circuits by Les Leston and others.

The floor-mounted gear lever allied to the fast, sturdy B.M.C. box as used on the M.G.'s, rack and pinion steering and fade-free Girling brakes with a large lining area all encouraged me to push this little car as hard as it would go. I found no difficulty in showing a clean pair of heels to most other fast machinery, frequently holding third gear until nearly 70 m.p.h. before changing to top and settling down

to a steady cruising speed of 80. The high third gear is, in fact, a boon for main road overtaking in safety. An equally meritorious feature of the Riley is its ability to reach 50 in 12 seconds from rest.

There was only one fault I could find with the handling of the Riley and that was the suspension. It is too soft for a car with such sporting performance and results in rather too much roll on bends but harder suspension at the expense of a less comfortable ride in normal touring is easily provided.

Railway Notes

By R. A. H. Weight

S.L.S. Jubilee Special's Record Run

One of the thrills of a lifetime! One of the fastest and most superbly organised private party specials the world has ever known! Such were deserved comments in May last, when we returned triumphantly from Doncaster to London aboard the smart maroon 8-coach train chartered by the Stephenson Locomotive Society to celebrate its 50th anniversary. The 350 passengers were enthusiastic members of that body or kindred Societies, and included some railwaymen, ladies and

The non-stop return dash with every signal clear was completed in less than 138 min. There were three additional cautionary slowings, without which we could have averaged about 71½ m.p.h. overall, instead of an actual 68, though that was very fine.

In evening sunshine we left Doncaster at 5.48; at 8.5 we were running into King's Cross. Remarkable uphill work and acceleration from slowings took us through Grantham punctually at 80 m.p.h., then over Stoke summit after a good deal of climbing at 75. This was astonishing in itself, but . . . down the famous descent therefrom, scene of so many records, *Sir Nigel* with regulator fully open quickly soared into 3-figure speeds, averaging 102 m.p.h. for 14 miles and 108 for 3½. Between Little Bytham and Essendine, a maximum of 111-112 was touched and there is little doubt that a somewhat higher velocity could have been reached, but the engine was now eased.

This was decidedly a post-war record and within one or two m.p.h. of the highest British passenger train maxima recorded on two special demonstration occasions in 1936-7 by A4 and L.M.S. 4-6-2s when nearly new. On this memorable 1959 day other steam, all-time or post-war records were also secured. One

was the attainment for the first time in Britain of three separate maxima of 100 m.p.h. or more in the course of one round trip by the same locomotive, crew and train. About 46 miles from London, approaching Sandy, 100 was undoubtedly touched with some distance over undulating grades at an exciting 98-99; and we were still doing 80 uphill at Hitchin! All regular speed restrictions were scrupulously observed each way; riding was steady and comfortable—a tribute to the good work of many Departments. The preceding *Queen of Scots* express hustled to keep out of the way and arrived early.

Driver Hoole, whom I mentioned in the June *M.M.*, strenuously backed up by Fireman Hancox, also of King's Cross Depot, where No. 60007 is

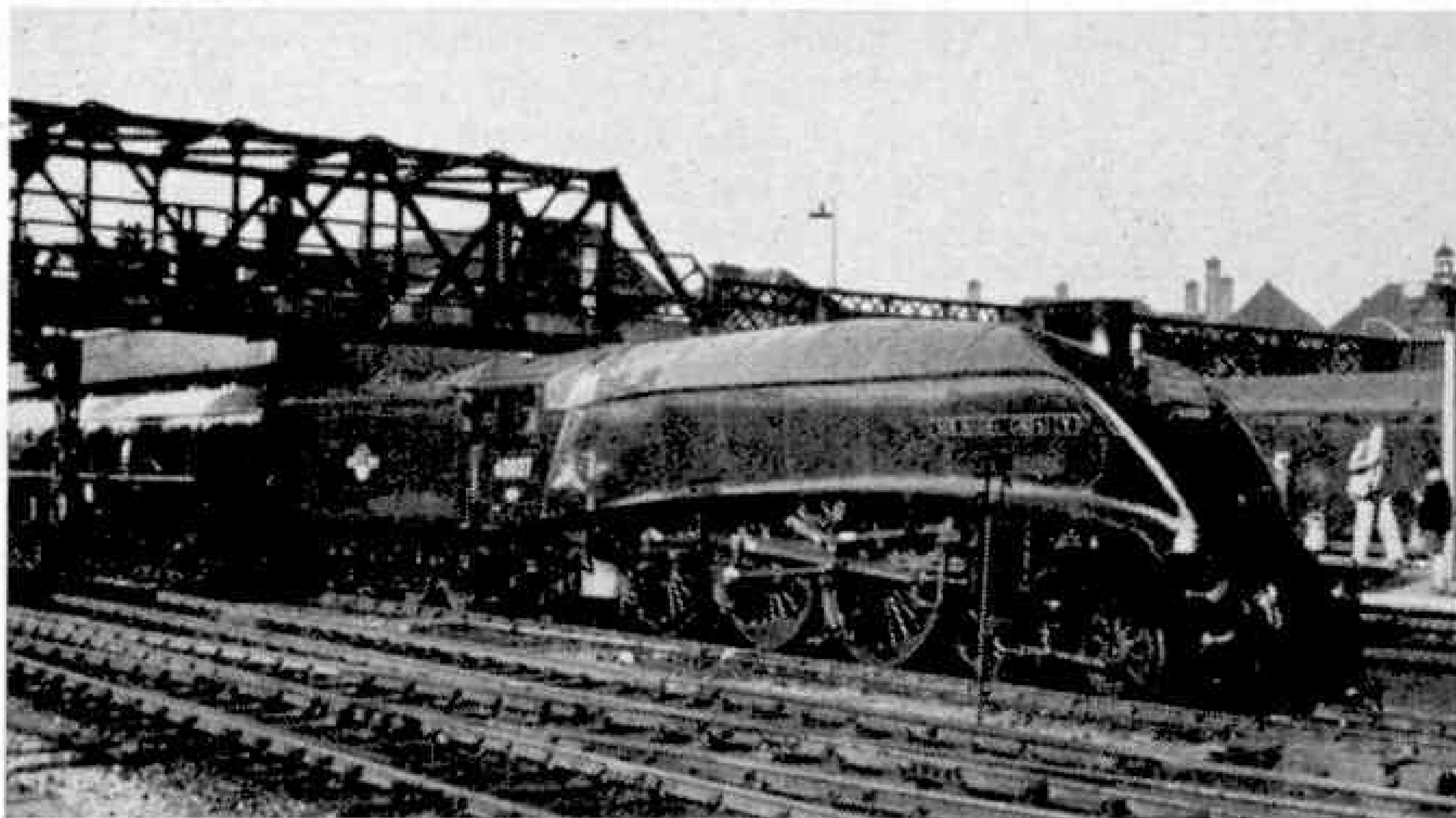
stationed, deserved and received the highest praise for their brilliant performance. Engine and train were in perfect condition on arrival.

Locomotive News

The numbering system for electric locomotives to be built for British Railways in considerable quantities, prefixed with the letter "E", will range from E 1000 for A.C. units, and from E 5000 upward for D.C. ones such as are coming into S.R. service. The first figure in the A.C. series for overhead lines will also give an indication of horse-power, for example: E 2001 for the 2,000 h.p. range; E 3001, 3,000 h.p. The first A.C. converted locomotive in use for training and testing purposes on the Manchester-Crewe line will be renumbered E 2001, instead of E 1000.

Revised construction orders now in hand include 95 type "A" express passenger or mixed traffic units to be numbered from E 3001-95; 5 type "B" for heavy mineral duty numbered E 3301-5. All will develop 3,300 h.p.

Reports from the Western Region tell of considerably greater use of new diesel-hydraulic locomotives on expresses, including extremely fast runs with the accelerated *Bristolian*; and, in great contrast, of the appearance of class 9 2-10-0s on a number of cross-country or main line passenger trains in the West of England on busy days. There are steam-diesel locomotive combinations of various kinds when double-



No. 60007 "Sir Nigel Gresley" at Doncaster, on the occasion of the special trip organised by the S.L.S. to honour the occasion of the Jubilee of the Society. Photograph by R. F. Roberts.

other fortunate guests. High speeds had been specially authorised for the occasion and the start-to-stop timings: King's Cross-Grantham, 105½ miles in 97 min.; Doncaster-King's Cross, 156 miles in 144 min., were the fastest ever.

Magnificent in appearance and performance was the 22-year old A4 streamlined Pacific No. 60007, *Sir Nigel Gresley*, named after the late eminent Chief Mechanical Engineer of the former L.N.E.R., and principal designer of famous Doncaster Pacific locomotive classes built between 1922 and 1938. The King's Cross-Grantham timing was kept exactly in spite of two slowings where trackwork was in hand, with a maximum speed of 101 m.p.h. after Hitchin; later, Stoke signal box at the top of the long rise between Peterborough and Grantham was passed at the record (steam) velocity of 82 m.p.h.!

The route, for sightseeing, from Grantham to Doncaster was by way of Lincoln and Gainsborough without stopping, at more modest speeds. During the afternoon the party visited Doncaster Locomotive Works, with guides available.

An official speaking from the footplate gave a commentary on the route, also a unique description at intervals of the position of the regulator, the "cut-off" or percentage of steam admission to the cylinders, steam-chest pressure, and the speeds shown on a specially fitted indicator: all clearly heard through loudspeakers in each carriage.

heading is needed over the steep S. Devon gradients.

Transformation in Kent

In an article published in the September, 1957 issue of the *M.M.*, I described the interesting and steeply graded S.R. London-Chatham-Kent Coast main line under the heading *Over the Hills to Thanet*, mentioning the fine steam locomotive work seen there, in the older days often under difficult rather under-powered conditions. Then came the Bulleid light Pacifics and the very capable B.R. class 5 4-6-0s. In mid-June this year, however, complete transformation was effected east of Gillingham, one of the Medway towns just over 30 miles from London. This was hitherto the outer limit of steamless multiple-unit trains, but electrification has been extended to Margate and Ramsgate, also from Faversham to Dover and along the Sheerness branch that stems from a triangular junction near Sittingbourne.

The services are now much more frequent, faster and at regular intervals; colour light signalling has been installed throughout, extending well over 200 track miles, making closer headways possible and visibility easier in bad weather conditions.

The new multiple-unit sets for the express services are the smartest and most comfortable of their kind in which I have travelled. They are made up in four-coach sets with driving compartment and powerful motors at each end, and with vestibuled corridor connections. Second-class accommodation is partly in compartments, partly in open saloons; first-class, all compartments. Buffet cars are like those for the London-Hastings diesel service described last June, though with the advantage of full main line width.



S.R. electric locomotive No. E 5000 on a test trip shortly after its construction. The train was photographed at Balham by S. Creer.

Travelling from Ramsgate to London by one of the standard hourly principal-stations trains running fast from Whitstable to Gillingham, where it joined on to a four-set from Dover and Faversham, then from Chatham to Bromley South, and on to Victoria, I was astonished at the extremely fast start-to-stop times achieved, for instance, while calling at the Kent coast stations from Margate to Whitstable, averaging nearly 60 m.p.h. over comparatively short distances, in spite of the gradients. Afterwards, by the way, we swept up the long formidable Sole Street bank at 57 m.p.h. or more! The 79½ miles Ramsgate to London took just under 2 hrs. including 11 stops.

The return journey over an initially different, 2-miles shorter, route from Cannon Street in a 12-coach train was exciting indeed! The quickest-ever timings to Whitstable and coast resorts beyond were improved upon and as there would soon be another train locally and numerous regular business passengers in the "5.14" to be taken home promptly, no waiting for time at the Thanet stations. Whitstable, 57 miles, was reached from the City of London in 62½ min., Herne Bay, 60½ in 67½ min., Margate, 71½ in 80½ min., finally after two more stops, Ramsgate, 77 miles, in 97 min. at 6.51 p.m. Such times would have been considered almost unbelievable only a year ago.

On four separate occasions 80 m.p.h. speeds were attained and the running in comfort was more reminiscent of, say, the *Atlantic Coast Express*, to me, than a comparatively short run electric, but this is the "new order" in North Kent!

New electric locomotives for hauling steam-type rolling stock or freight are entering service from Doncaster Works numbered from E 5000 up—I saw No. E 5007 at work early in August—as previously mentioned in these notes. They develop 2,500 h.p.



A gallant effort by steam on the part of 4-4-0 No. 31766 with a 10-coach "Kentish Belle" Pullman bound for the Kent coast during the summer of 1958. Photograph by B. C. Bending.

Greatest Since Lindbergh

By John W. R. Taylor

SOON after eleven o'clock on the morning of 2nd June last, a pilot named Max Conrad took off from Cazes Airport, near Casablanca, Morocco, in a Piper Comanche lightplane and headed out across one of the longest, loneliest stretches of ocean in the world. At 2.47 p.m. on 4th June he landed at Los Angeles Airport, California, after 58 hr. 38 min. alone in the air. In doing so he set up one of the most remarkable non-stop distance records in flying history.

Of course, he is no amateur flying grandfather. His interest in long-distance flights dates from 1950, when he piloted his own 135 h.p. Piper Pacer from America to Europe to visit his family, who were then living in Switzerland. He repeated the round trip across the Atlantic two years later, and decided afterwards to make a business of delivering aeroplanes to owners overseas.

He first made news in 1954, when he flew a twin-engined Piper Apache business 'plane non-stop from New York to Paris over Lindbergh's route. Since then he has ferried more than 50 other light planes to Europe, including a Comanche which he flew non-stop nearly 5,000 miles from Chicago to Rome. In addition he became the first man to pilot a Piper across the Pacific when he delivered an Apache to Seoul, Korea, in July 1958.

These trips were, to him, routine. The same was certainly not true of his

record attempt in June; but the aeroplane he used was a perfectly standard Comanche, straight off the assembly line in the Piper works at Lock Haven, Pennsylvania.

Being a highly-qualified mechanic, Conrad himself did most of the work of getting the little monoplane ready for the flight. The only alterations to the airframe and its 250 h.p. Lycoming engine consisted of a weight-saving programme which involved such items as removing the engine starter, using a smaller electric generator and eliminating all possible external drag-producing components like cowlings, latches and door handles.

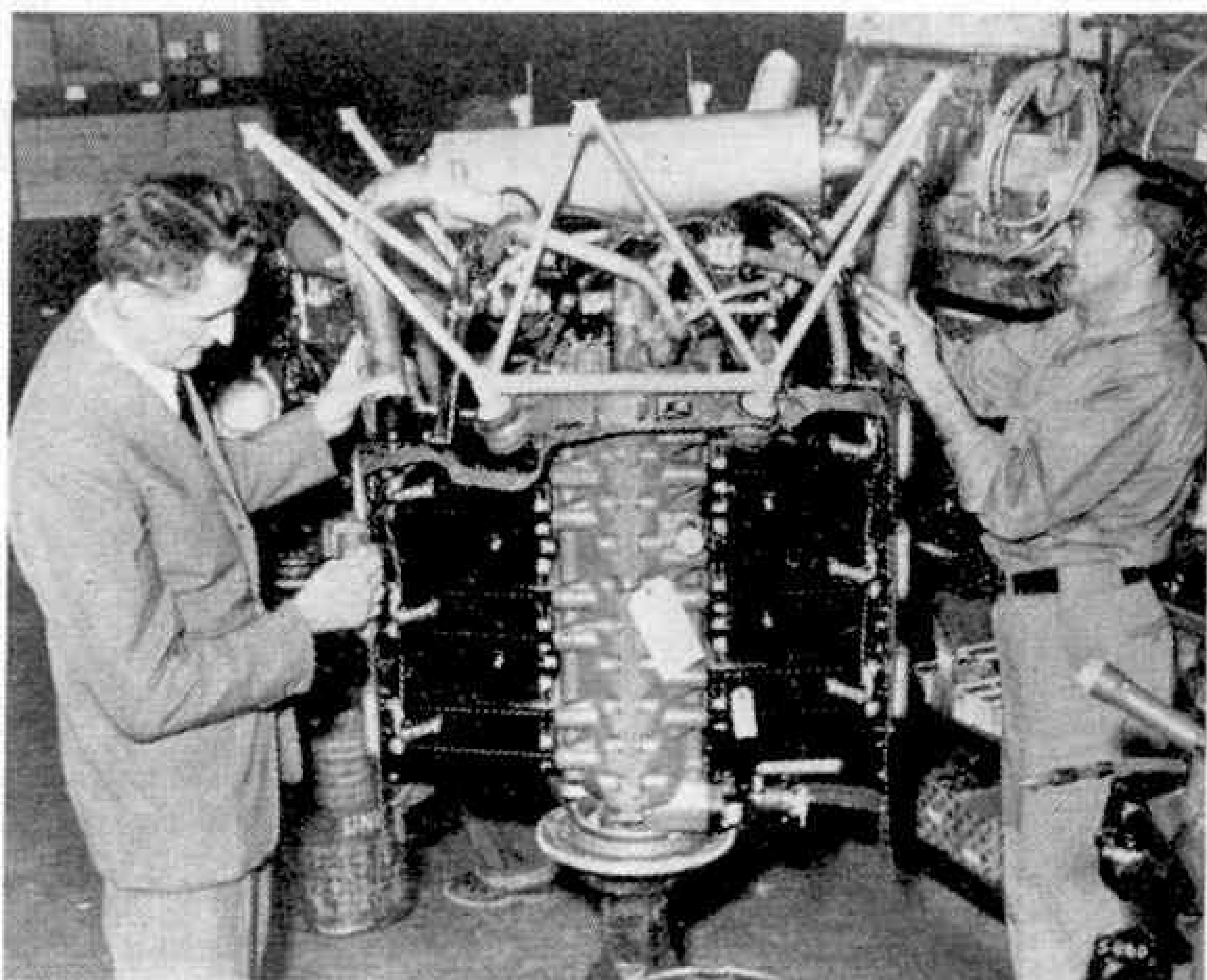
The Comanche's normal four-seat cabin is so roomy that all the extra fuel required for more than 8,000 miles of flying could be carried inside, removing the need for wing-tip tanks. Altogether six separate



Max Conrad poses on the wing of his Piper Comanche. Photograph by Anthony Linck.

To discover just how great was his achievement, let us compare it with the first solo non-stop transatlantic flight, by Charles Lindbergh back in 1927. Lindbergh flew 3,609 miles in 33½ hr. in a Ryan monoplane with a single Wright Whirlwind engine of only 220 h.p. Conrad flew a total of about 8,300 miles in 58½ hr., and the engine of his Comanche was only 30 h.p. more powerful than that of the Ryan.

Even if we take into account the advances made in aviation in the past 32 years, which enabled Conrad to leave some of the work to his automatic pilot and radio aids, we must bear in mind also the comparative ages of the two pilots. Lindbergh was a young man of 24 when he made his famous New York-Paris flight. Max Conrad is 56 years old, with ten children and two grandchildren.



Conrad (left) takes a look at the 250 h.p. Lycoming engine before its installation in his aeroplane.

tanks were installed in the cabin, one of them serving as a seat, and they increased the aircraft's fuel capacity from 50 to 433 gallons. It was not considered necessary to carry an extra oil tank; and at the end of his flight Conrad actually had 25 gallons of B.P. fuel and half the oil left in the tanks.

Like all AutoFlite model Comanches, the aircraft was equipped with a Piper AutoControl automatic flight system, which Conrad used most of the time. Radio equipment included an ARC automatic direction finder, Collins VHF transmitter-receiver and a Sunair long-range transmitter-receiver. No other special equipment was carried; but a one-man life-raft, a lifejacket and a SARAH lightweight rescue beacon were packed on board in case of a ditching at sea.

This, then, was the aeroplane which

Max Conrad taxied out to the end of the runway at Casablanca on that June morning. Thanks to the co-operation of the U.S. licensing authorities, it bore the very appropriate special registration number N110LF, the LF standing for "Let's Fly", the slogan adopted by Conrad in his efforts to get the young people of America and the world air-minded.

Conditions were far from ideal. There was a cross-wind of eight knots and he had to take off in a north-easterly direction, which carried him directly over the centre of the city. Quite apart from the fact that this was exactly opposite to the direction he wanted to go, it raised safety problems, because the Comanche was weighed down

with 3,496 lb. of fuel, equipment and pilot, equivalent to more than twice its own empty weight of 1,504 lb.

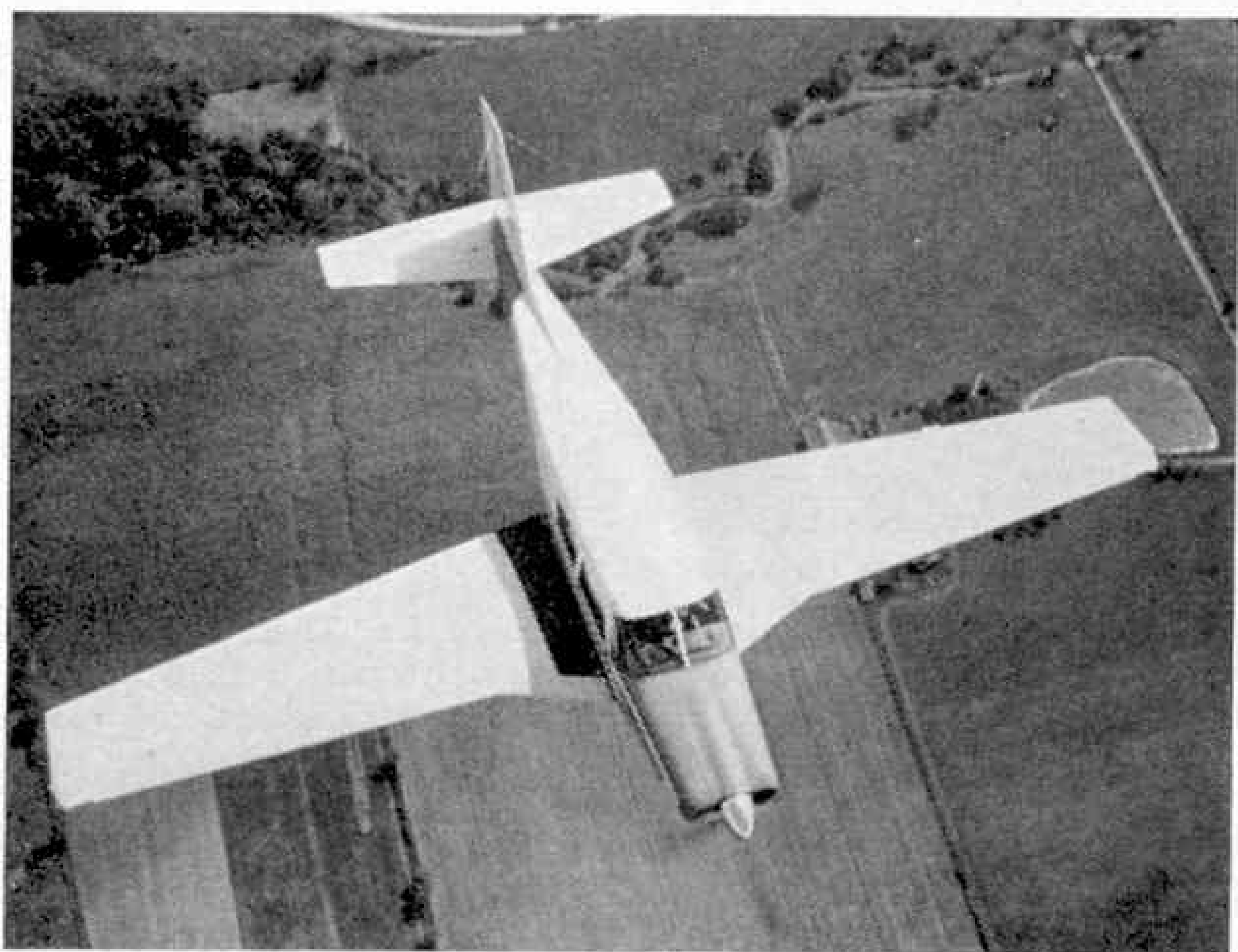
Acceleration tests along the runway showed that the aircraft would reach 65 m.p.h. with a full load in 900 ft. and 90 m.p.h. in 1,600 ft. This seemed good enough and, in fact, when Conrad made his take-off run at 11.09 a.m., the Comanche left the ground at 110 m.p.h. after using only 4,000 ft. of the 6,000 ft. runway. It climbed away steadily, gaining 500 ft. per min., and showed itself to be very stable, despite its load.

Conrad had planned to fly along two great circle routes, from Casablanca to Trinidad and Trinidad to El Paso in Texas. This meant that the first leg of 3,700 miles would take him over a stretch of the Atlantic unfrequented by airlines,



Extra fuel tanks in the cabin gave Conrad's Comanche a total fuel capacity greater than that of the nine 45 gall. drums shown stacked near the aircraft.

steamships or weather ships, with very little weather information available and no radio navigation aids. But he had immense confidence in his aircraft and in his own dead reckoning navigation, and, as it turned out, he was able to get bearings on South American radio stations at the half-way mark.



The clean lines of the Piper Comanche are well displayed in this plan view of one of these aircraft.

By then it was clear that he was not going to have an easy flight. The head winds encountered over the first 100 miles had gradually veered round to the north and were giving him some help; but most of the time he had to fly through extremely rough air, in continuous rain, at heights between 100 and 2,500 ft. above the wave-tops.

Conrad crossed the island of Trinidad at tree-top level and was clocked over Piarco International Airport 26 hr. 39 min. after take-off, giving an average speed of 140.8 m.p.h. Unfortunately, the most gruelling part of the journey was still to come. After passing Jamaica, with darkness falling at the start of his second night in the air, he ran into thunderstorms over the Gulf of Mexico which were so severe that he was unable to use his radio or navigation aids for six long hours. This cost him four hours, or nearly 500 miles, because he had no alternative but to "stooge" around the Gulf waiting for daylight and for an end of the storms.

Even worse, by this time he was beginning to suffer from thirst. He carried no food, only a thermos of coffee and tea, and had

decided to ration himself to a sip an hour. But he discovered to his dismay that the tea was rancid, and it made him very sick just as he flew into the storms over the Gulf of Mexico. He purposely headed for rain squalls, hoping he could scoop in a little water by holding the cup from his thermos out of the window. The rain

swished out of the cup as fast as it went in, and he finally managed to get a few drops only by holding out the funnel-shaped top of the tube through which the aerial of his long-range radio passed.

As a result, although the weather was clear, with light winds, once he had crossed the U.S. coastline at Corpus Christi, Texas, he confessed to the radio-man at El Paso that he would willingly trade a gallon of petrol for a cup of water.

Nevertheless, as he cruised 100 ft. over the desert, with his 50-gallon wing tanks still untouched, he decided to fly on to Los Angeles. In order not to disappoint all the friends who had gathered at El Paso to welcome him, he

flew ten miles out of his direct course and made a low pass over the International Airport there, before climbing to 10,000 ft. and completing his 2½-day flight with an escort of Piper Apaches carrying newsreel and pressmen.

The official distance he had flown, ignoring detours, was 7,668.48 miles, during which his little 250 h.p. engine had never missed a beat, and it exceeded the previous lightplane distance record by 812 miles.

Then came perhaps the most remarkable part of the whole story, for Max Conrad arrived in such fine shape that, having taken a drink of water, he answered reporters' questions, posed for TV interviews, dashed to the telephone to talk to one of his daughters in San Francisco, and then got back into the Comanche and flew another 40 miles to Orange County Airport, Santa Ana. There, he took a nap in an hotel room, and then went out for a midnight walk—which is a wonderful tribute to the qualities of both the modern light aeroplane and the grandfather from Winona, Minnesota, who has done more than anyone to prove its capabilities.

By Brake Van Across the Mendips

By
R. E. Toop



ONE Saturday morning in May, groups of passengers waiting at Bath (Green Park) station looked rather questioningly at me, as with the stationmaster and a British Railways inspector I made towards a goods brake van in the station goods spur. There we were welcomed by the guard and entered. We waited for the northbound *Pines Express* and the 12.25 p.m. Saturdays only local train to Bristol to leave the station, as the train on which I was travelling was due out at 12.35. Then Western Region 0-6-0T No. 3742, only recently allocated to Bath sheds, drew us out across the river Avon, past Bath locomotive sheds and on to where a goods train had been marshalled in a siding. A class 7F 2-8-0, No. 53804, one of the class especially constructed for freight work on the Somerset and Dorset line, and a class 4F 0-6-0, No. 44146, were waiting.

The 0-6-0 tank uncoupled and drew away. The 4F 0-6-0 came on to the other end of our van and propelled us to the end of the waiting goods train and, after we had been coupled on, drew the complete train out on to the main line. The 2-8-0 No. 53804 was attached to the head of the train, "crow" whistles were exchanged and we were off.

As soon as Bath goods yard was cleared, the train was launched on the two-mile

The picture at the head of the page shows the Saturday 12.35 p.m. freight train on the former Somerset and Dorset Railway from Bath passing Midsomer Norton, hauled by 7F 2-8-0 No. 53806 and banked by an 0-6-0 tank engine. This article describes the journey made by the train. Illustrations from photographs by the author.

climb out of the city, for the most part graded at 1 in 50. As the line is single, the bank engine crew were issued with a staff by the Bath Junction signalman in addition to the tablet issued to the crew of the train engine. This meant that no other train could enter the section in either direction until the tablet had been surrendered at Midford and the bank engine staff replaced at Bath Junction signalbox.

On the first 1 in 50 section of the incline we crossed the main Paddington to Bristol line of the Western Region, and then after a brief level stretch of 100 yards at the most, we could see our line continuing straight ahead for some distance to Devonshire Tunnel.

By this time the gradient had reverted to 1 in 50. The tunnel passes under three main roads and has no air vents at all, and its atmosphere with two engines working hard uphill needs to be experienced to be fully appreciated! Never had its 447 yards seemed to me so long as on this outward journey, and we gratefully drank in the fresh air as we emerged at the Eastern end.

At the two-mile post marking the summit and the entrance to Combe Down tunnel, 1 mile 69 yards long, the bank engine fell away and we plunged into the tunnel. We were now on a falling gradient of 1 in 100, and after the Devonshire bore the air

within it seemed quite fresh. We emerged into the beautiful Midford valley over one viaduct, snaked round some reverse curves and then we were through Midford, where the single line tablet was delivered automatically. Then came Midford's second viaduct and we entered a double track section. By now the sun was shining and we were able to see the rolling countryside at its best.

Between Midford and Radstock there are almost continuous reverse curves, and we rolled past Wellow station and Shoscombe and Single Hill Halt. North of Radstock, near Writhlington signal box, we saw the first of the many collieries in this area, and as the Radstock distant signal was at caution, we proceeded carefully on towards Radstock. There, outside the small two-road locomotive shed, an 0-6-0T, No. 47275, was waiting with steam up ready to provide banking assistance up the 7-mile climb through the Mendip hills. The "Jinty" was signalled out of the yard under the supervision of the Radstock "A" signalman, and while this was going on our attention was drawn to one of Radstock's



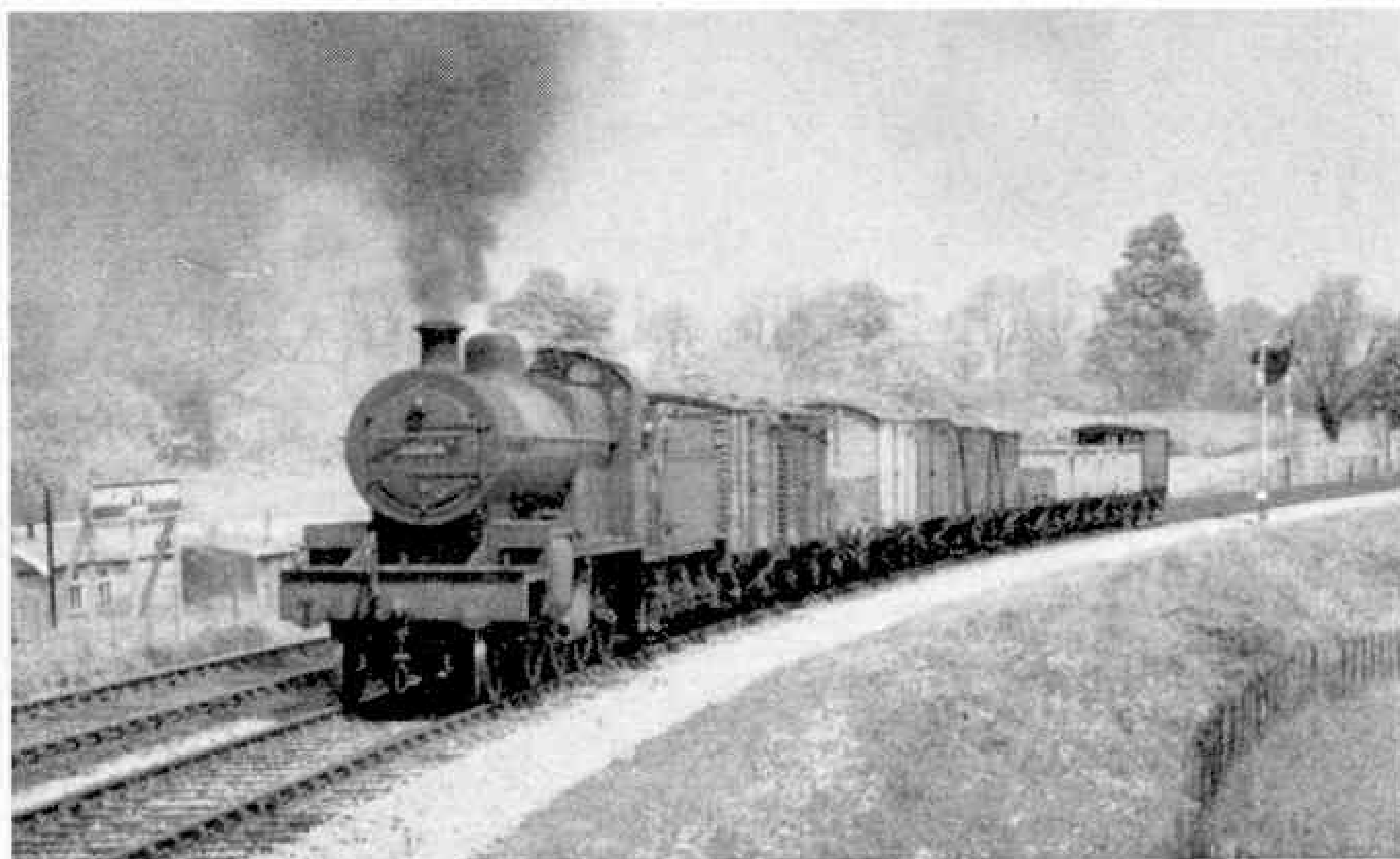
Ex-Somerset and Dorset 2-8-0 No. 53801 at Masbury summit, the highest point reached in the Mendips by the line, with a down freight banked by 0-6-0T No. 47557.

"Sentinel" shunting locomotives. These were constructed in 1929 especially for work around the colliery sidings, where some of the overhead clearances are low and the curves exceedingly sharp.

The 0-6-0T now having buffered up to the rear of our train, the Radstock "B" signalman caused some traffic congestion by opening the level crossing gates that protect the main road from Bath. Then signals were pulled off and "crow" whistles exchanged between the two locomotives, and, from a standing start, the train set out on a 1 in 55 gradient.

We got away very smartly and were soon running parallel with the old Bristol and North Somerset line of the Western

Region between Frome and Bristol. We crossed this line by means of the North Somerset Viaduct of five masonry and brick arches, and ran on through picturesque Midsomer Norton South station, where sidings run to the nearby Norton Hill colliery. Through Chilcompton station the line follows its curving and upward course, with a short tunnel 65 yards long, in



Ascending an incline of 1 in 60 between Chilcompton and Binegar, 2-8-0 No. 53804 passes Moorewood sidings with a light freight train.

which it was once more a case of handkerchiefs over nose and mouth!

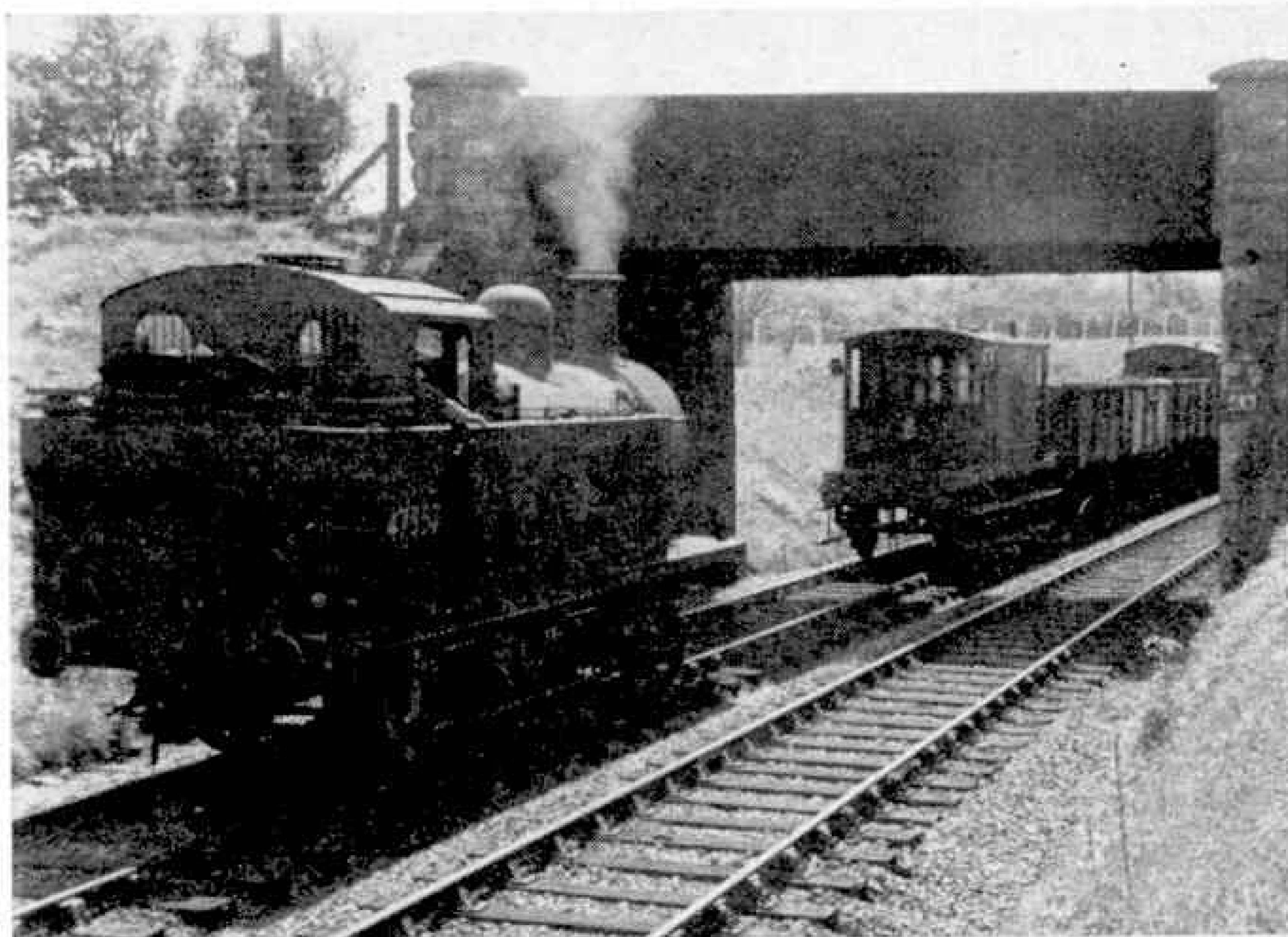
We were brought down to a mere 5 m.p.h. at Moorewood signal box, where work was in progress on the bridge that carries our line over the main Bristol-Shepton Mallet road, but speed was picked up very well again considering that we were climbing on a 1 in 60 gradient. We crossed Moorewood viaduct and rounded a long curve to Binegar station, where our bank engine crew collected a staff similar in principle to the one issued at Bath, but employed here to enable the bank engine to return to Binegar station on the down line after assisting its train to Masbury summit. This may be the only instance in the country where an engine may travel back on the same line without a "wrong line" working order.

Our attention was now fixed on Masbury summit, 811 ft. above sea level, and, as we passed over the top, our bank engine dropped off and the guard gave his attention to braking. The gap between the buffers of our van and the next vehicle proved how effective his work was proving on this 1 in 50 down gradient. We passed Masbury Halt and looked out in vain across the Vale of Avalon for Glastonbury Tor, for the Vale was enshrouded in mist.

The now derelict Winsor Hill Sidings signal box was passed and the down line portal of the twin tunnels of the same name traversed. On we went towards Shepton Mallet, with its two graceful viaducts Charlton and Bath Road, the latter the highest of the viaducts encountered between Bath and Evercreech, and came to a stand at the Charlton Road station in Shepton Mallet. There No. 53804 replenished its water supply, for its tank was now short. While we were waiting a Western 0-6-0 pannier tank and brake van crossed our line on the old East Somerset line from Wells to Witham.

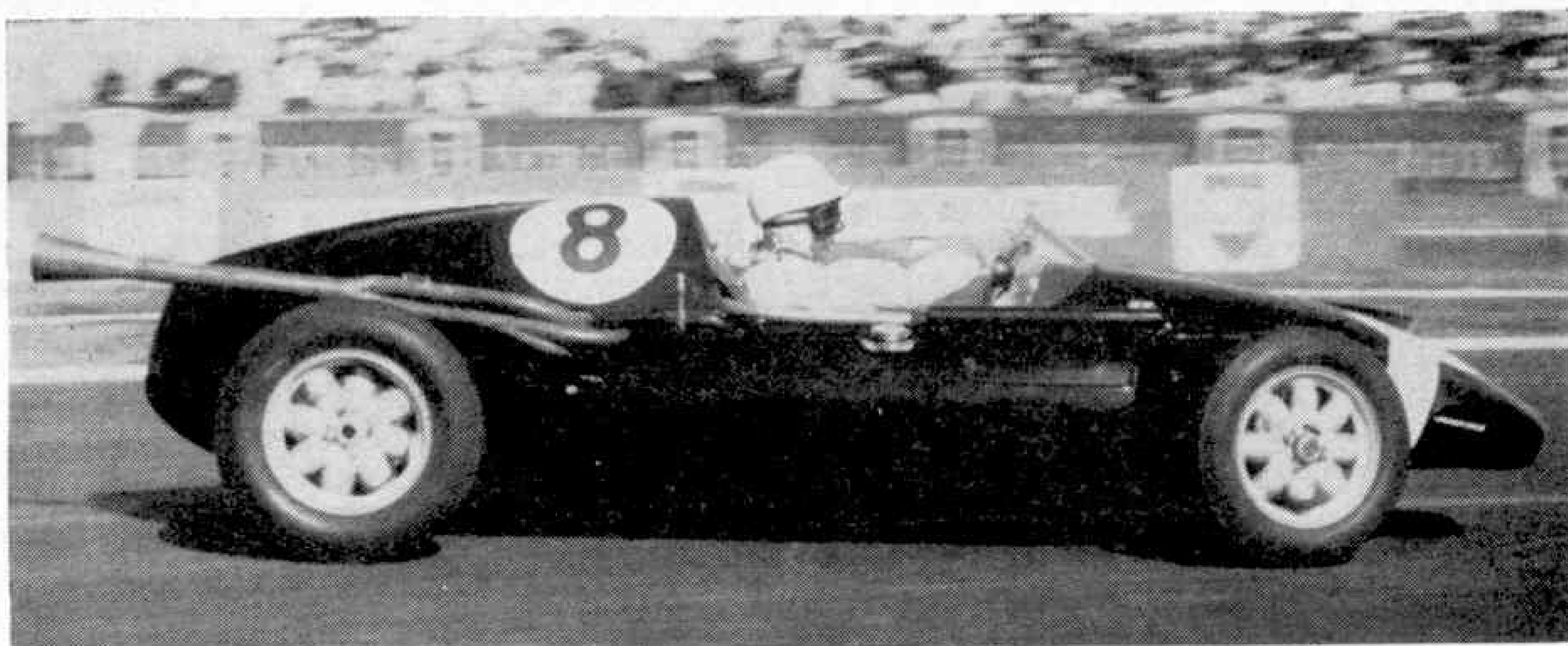
Our locomotive's thirst quenched, we continued our winding descent over open hillside, passing Evercreech New station, considerably nearer to the community of Evercreech than the old Evercreech Junction station, and after another mile or so, drew up alongside the Evercreech Junction goods yard. There the yard pilot, an old class 3F 0-6-0, No. 43218, introduced in 1896 and built for the ex-Somerset and Dorset line, was waiting to connect on to our brake van and transfer it to the yard sidings. From there we watched No. 53804 back our train into a siding, and it was scarcely clear of the main line before the 1.10 p.m. departure from Bath (Green Park), a local stopping train, passed by and pulled into the station.

This was the end of our outward run from Bath. Our 2-8-0 was turned on the



0-6-0T No. 47557 dropping off the rear of a down freight train at Masbury summit, the highest point reached in the Mendips by the ex-Somerset and Dorset line, after banking up from Radstock, a distance of about 7 miles. The "Jinty" will now return to Binegar on the down line, for which a special staff is issued, before crossing to the up line for its return to Radstock.

junction turntable, which is situated in the angle formed by the two routes to Bath and Highbridge, and then backed on to four vans and our brake van, which made up the train for the return journey. Whereas the return working normally leaves Evercreech Junction at 4.45 p.m., on this occasion it was possible to grant us a passage back to Bath only one hour after our arrival. We waited for the 2.20 p.m. ex-Highbridge local passenger train to cross our path, (Continued on page 472)



Road and Track

By Peter Lewis

BRITISH car manufacturers have every reason to be proud of themselves at this year's Motor Show at Earl's Court, for undoubtedly this country now produces a wide and varied range of world-beaters.

Proudly we present cars like the unorthodox, brilliantly-designed Mini-Minor and Austin Seven, the exciting new Ford, the revolutionary Triumph Herald, the luxurious new Rovers, the powerful 100 m.p.h. Austin A.99, the breath-taking Jaguar range, Colin Chapman's fabulous Lotus Elite with its leech-like roadholding properties, the M.G.A. 1600, the restyled, speedy Vauxhalls and the latest products from the Rootes Group, including the very rapid Hillman Minx with revolutionary "Easi drive" and the even more rapid Sunbeam Alpine.

If I were given a choice, I should like to have the last named for two weeks on the Continent, for the new Alpine is indeed a car of many virtues. Briefly, Rootes have produced an out-and-out sports car that combines a safe maximum of 100 m.p.h. with typical Rootes saloon car comfort and high quality finish.

The 1,494 cc. four-cylinder, twin carburettor engine, extensively modified from the basic Sunbeam Rapier unit and with a compression ratio of 9.2 to 1, develops 83.5 b.h.p. gross at 5,300 r.p.m. The power is transmitted to the road wheels through a four-speed close ratio gear-box with a short,

well positioned remote control lever.

Power alone can be dangerous. Not so with the Alpine, for the rigid design of the unitary construction, precise steering, excellent suspension and braking system all add up to faultless handling characteristics. This is the first Rootes car to have disc brakes. Girling discs have been fitted at the front, with normal drum brakes at the rear.

Comfortable bucket seats, the usual well laid out and comprehensive Rootes instrument panel, a well placed steering wheel and the hand-brake beside the driver's seat on the offside make this a car that is a pleasure to drive, fast or slow.

Admittedly there is very little room in the back for passengers, but this is luxury sports car travel at up to 100 m.p.h. for two people at £971 10s. 0d. and wonderful value it is.

Stirling Moss

What a tale of woe it has been for Stirling Moss this season. And yet we have seen him at his best, for no other driver is capable of putting up such a fight or of getting more out of an unsuitable car under adverse conditions. We saw him fighting against odds at Rheims and Aintree in the B.R.M., a car that was not as fast as the Ferraris at Rheims and did not handle as well as the Coopers at Aintree.

His drive at Monaco, when he led with the Rob Walker Cooper for 81 laps and was then forced to retire, and his victory with

The illustration at the head of this page shows Stirling Moss at speed in the F.2 Cooper-Borgward. In this car, fitted with a special gear-box designed by Collotti, he has won all the major F.2 races on the Continent this season.

the same car in the Portuguese Grand Prix were Moss at his unbeatable best.

What a tragedy that the Rob Walker Cooper-Climax did not show reliability until the Portuguese G.P., almost at the end of the season and following the discovery by Alf Francis, Walker's Chief Mechanic, that the gears of the Italian-made Collotti gear-box were not quite to the specified design. With this otherwise excellent car, reliability came too late.

However, Moss has driven another car this season with a similar gear-box built by Collotti, the F.2 Cooper-Borgward that belongs to Rob Walker. With this German-engined car, prepared by Francis, Moss won the F.2 races at Syracuse, after a tremendous duel with Behra on the F.2 Ferrari, Rheims, Rouen and Clermont Ferrand. Tough races, tough circuits and no trouble at all.

I have an idea that we shall see a lot more of the Cooper-Borgwards next season, for the man who put them on the map is Ken Gregory, Business Manager for Moss and partner with Stirling's father in the British Racing Partnership.

It was Gregory who started the Cooper-

Borgward project in November 1958. After the Casablanca G.P., he sent Rob Walker's F.2 Cooper chassis to Bremen, where it was fitted with a 1½ litre fuel-injection Borgward engine. The car was raced for the first time in the Aintree 200 early this season, and



The new 1½-litre Sunbeam Alpine Sports Car on test in the south of France.

driven by Trintignant, but injection troubles put it out of the running. Syracuse, a week later, was the car's next race, and Moss then really put the Cooper-Borgward on the map.

Meanwhile the British Racing Partnership had joined the fray with two more Cooper-Borgwards, which in the early days were driven by Ivor Bueb and George Wicken. These cars were built at Surbiton in the Cooper works and the German engines fitted there under the supervision of Tony Robinson, the Chief Mechanic of the Partnership. Their record this season in the F.2 Class has been an impressive one; three firsts, two seconds and a third.

The Partnership intend to carry on with the F.2 Cooper-Borgwards in 1960, for this capacity car is, of course, the choice for the new Formula I in 1961, and I shall be surprised if the light green B.R.P. Cooper-Borgwards do not figure prominently in the 1961 World Championship results. Whether Moss will drive one in 1961 remains to be seen.

The Riley 1·5

I was very pleased to have the opportunity of covering several hundred miles on a Riley 1·5 recently. This twin-carburettor high compression version of the Wolseley 1,500 uses the well-tried B.M.C. B Series 1½ litre engine, and has a truly remarkable performance, which is frequently demonstrated around (Continued on page 429)



The Riley 1½-litre in which our motoring correspondent enjoyed the test run described on these pages.



The 400th Vickers Viscount. It is one of three V.833s ordered by Hunting-Clan Air Transport.

Air News

By John W. R. Taylor

The 400th Viscount

It may seem surprising to have a picture of a Viscount in *Air News* after this fine British turboprop air liner has been in service for so long; but G-APT B is no ordinary aeroplane. It is, in fact, the 400th Viscount built by Vickers-Armstrongs since production started nearly ten years ago.

G-APT B is one of three Viscount 833s ordered by Hunting-Clan Air Transport. It is powered by four 1,990 h.p. Rolls-Royce Dart Mk. 525 turboprops, which give it a cruising speed of 362 m.p.h., and is equipped as a 64-seater. Like the other aircraft flown by this independent airline, it has its fin and rudder painted fluorescent red, to make it more easily seen in bad visibility and so reduce the risk of collision.

Helicopters to Paris

Lord Douglas of Kirtleside, Chairman of B.E.A., said recently that he hoped B.E.A. would be operating up to six helicopter services each day between London and Paris in 1963, taking passengers from city-centre to city-centre in about 75 min., compared with the present 3½ hr.

The Fairey Rotodyne, for which B.E.A. have placed a provisional order, will not be ready by then. So it seems likely that the Corporation will buy a small number of Bristol Type 192C tandem-rotor helicopters, developed from the R.A.F.'s Type 192. Bristol have

stated that the Type 192C could carry 24 passengers over a range of 136 miles for a direct cost of 6½d. per passenger-mile. By increasing the fuel capacity and reducing the number of passengers to 15, a stage length of 310 miles could be covered.

Guppy Gannet

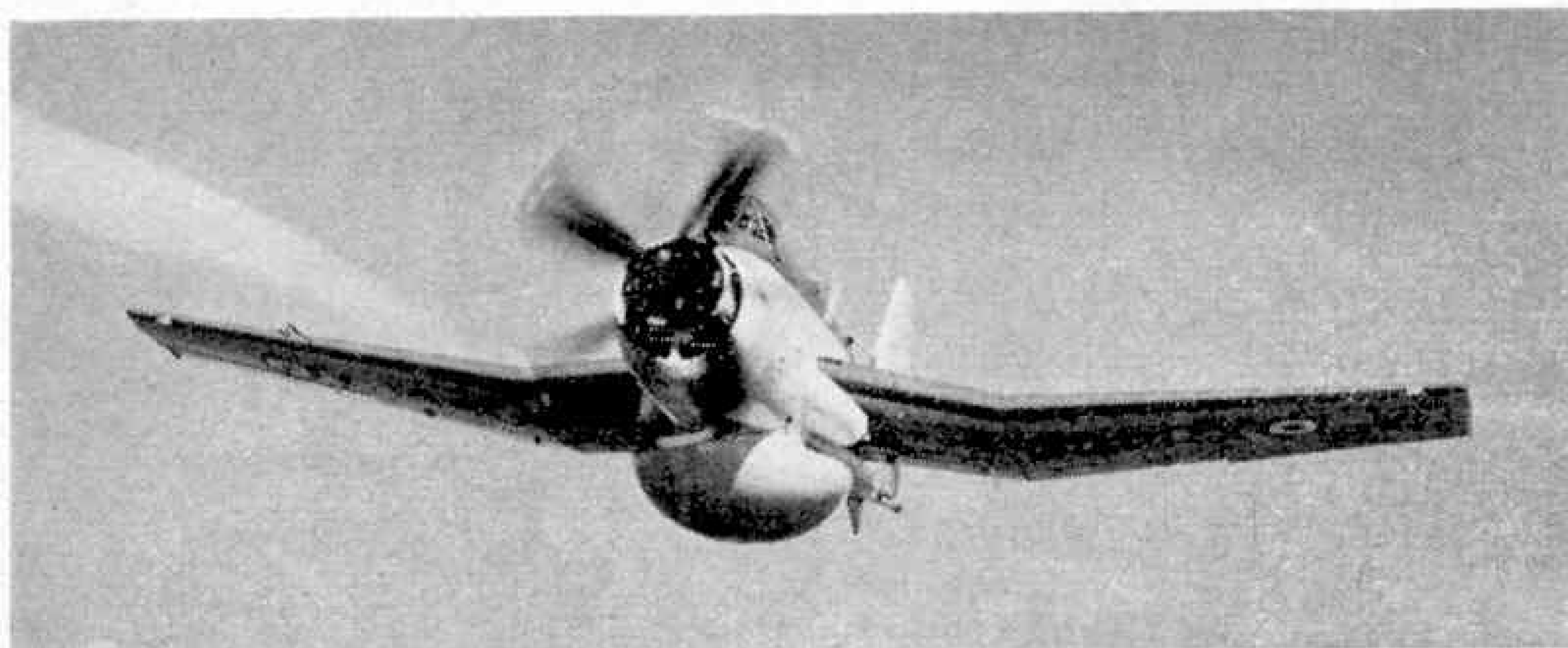
The Fairey Gannet was never particularly handsome and the latest version, illustrated below, is even less attractive; but it is an aeroplane that the Royal Navy needs very badly.

Most noticeable feature of the new machine, designated the Gannet A.E.W. Mk. 3, is the enormous radome under its fuselage. This gives the key to the aircraft's job, for the A.E.W.3 is an airborne early-warning "flying radar station", designed to take off from carriers at sea and to detect the approach of enemy ships or low-flying aircraft long before they would be picked up by the Royal Navy's own ship-borne radar. It will replace the veteran Douglas Skyraiders of No. 849 Squadron, which are used at present for this task.

Only the pilot is seated under the normal sliding hood. The other two crew-members are carried inside the fuselage, where they can watch the radar screens, as well as carrying out normal radio and navigation duties. To give them as much space as possible, the twin exhausts from the Bristol Siddeley Double Mamba turboprop engine now pass under the leading-edges of the wings, instead of having their outlets on each side of the rear fuselage.

Helicopter Refuels Stranded Ship

The story has just been told by the French Sud-Aviation company of how one of their Alouette II turbine-powered helicopters, owned by Autair Helicopter Services, set up an aerial fuel pipeline to the German freighter *Trans-Ontario* when the ship



This latest version of the Fairey Gannet is described on this page. Note the big radome under the fuselage.

An Armstrong Whitworth A.W. 650 Argosy freight transport being inspected by B.E.A. senior officials when it visited London Airport recently.



was trapped by ice in the St. Lawrence river last winter.

When the operation started, the *Trans-Ontario* had less than two days' fuel left to provide heat and power for her 25-man crew, with none at all to enable her to get under way again when the icebreakers had cleared a path for her. In three hours on the first day, the *Alouette* air-lifted 16 drums of diesel oil, each containing 45 gallons, two at a time in a net slung under its fuselage. Altogether, over a five-day period, it carried 37½ tons of fuel to the ship, in conditions of extreme cold and blizzards.

Argosy Demonstrated

An Armstrong Whitworth A.W. 650 Argosy freighter, illustrated above, visited London Airport on 5th August last and was inspected by senior officials of B.E.A. During the visit a demonstration was given of loading a Dart turboprop—the power plant of the Argosy and Viscount—into the aircraft's big freight-hold.

One of the many attractive features of the Argosy is that the cabin is fitted with large doors at both the front and rear ends, permitting simultaneous loading and unloading. So it came as a surprise to learn recently that the 20 military A.W. 660s ordered for R.A.F. Transport Command will have only tail-doors. These will, however, be of the beaver-tail type, so that they can be opened in flight to permit the parachuting of heavy equipment and supplies.

Chocolate-Flavoured Space-Ships?

The American magazine *Newsweek* stated recently that U.S. rocket engineers are considering seriously the possibility of building edible space-ships. The idea is that interior walls and insulation, intended mainly to protect the occupants during take-off, should be made of dehydrated food which the crew could munch during long flights. This would save weight by avoiding the transport of food which would have no purpose other than to be eaten!

Five-Engined Jet-Liner

Keen spotters should not imagine that their eyes are deceiving them if they see what appears to be a five-engined Boeing 707 jet-liner flying overhead at any time in the future. To avoid the need for keeping large and costly stocks of spare engines at airports along the routes served by its customers, Boeing have designed a "Pod-Pak" which makes it possible for any 707 to transport a complete replacement power plant under its wing-root, as shown below on a Qantas 707-138.

Thanks to this bright idea, if a 707 became stranded with engine trouble, a spare engine could be flown out quickly by another aircraft on a regular passenger service. Flight tests have shown that the Pod-Pak, with its streamlined nose and tail fairings, has no marked effect on handling qualities, and the scheme should save airlines a lot of time and money. So far, eight operators, in addition to Qantas, have placed orders for Pod-Paks.

World War I Fighter Flies

Latest World War I fighter to be seen again in our skies is the S.E.5A, the little biplane in which so many of the greatest British aces, including Mannock, Bishop, McCudden and Rhys-Davids, achieved their finest victories in the dog-fighting over the Western Front in France.

A replica of the S.E.5A, accurate in every detail, has been built by apprentices at the Royal Aircraft Establishment, Farnborough, from the original blue-prints. The woods and metals used for the airframe are exactly as specified in 1917, and the engine is a genuine 200 h.p. eight-cylinder Hispano-Suiza which has been loaned, together with its propeller, by the Science Museum.



Boeing 707-138 jet-liner, with spare engine in a "Pod-Pak" under the port wing-root. This particular aircraft is in service with Qantas Empire Airways.

Modern Small Boat Building

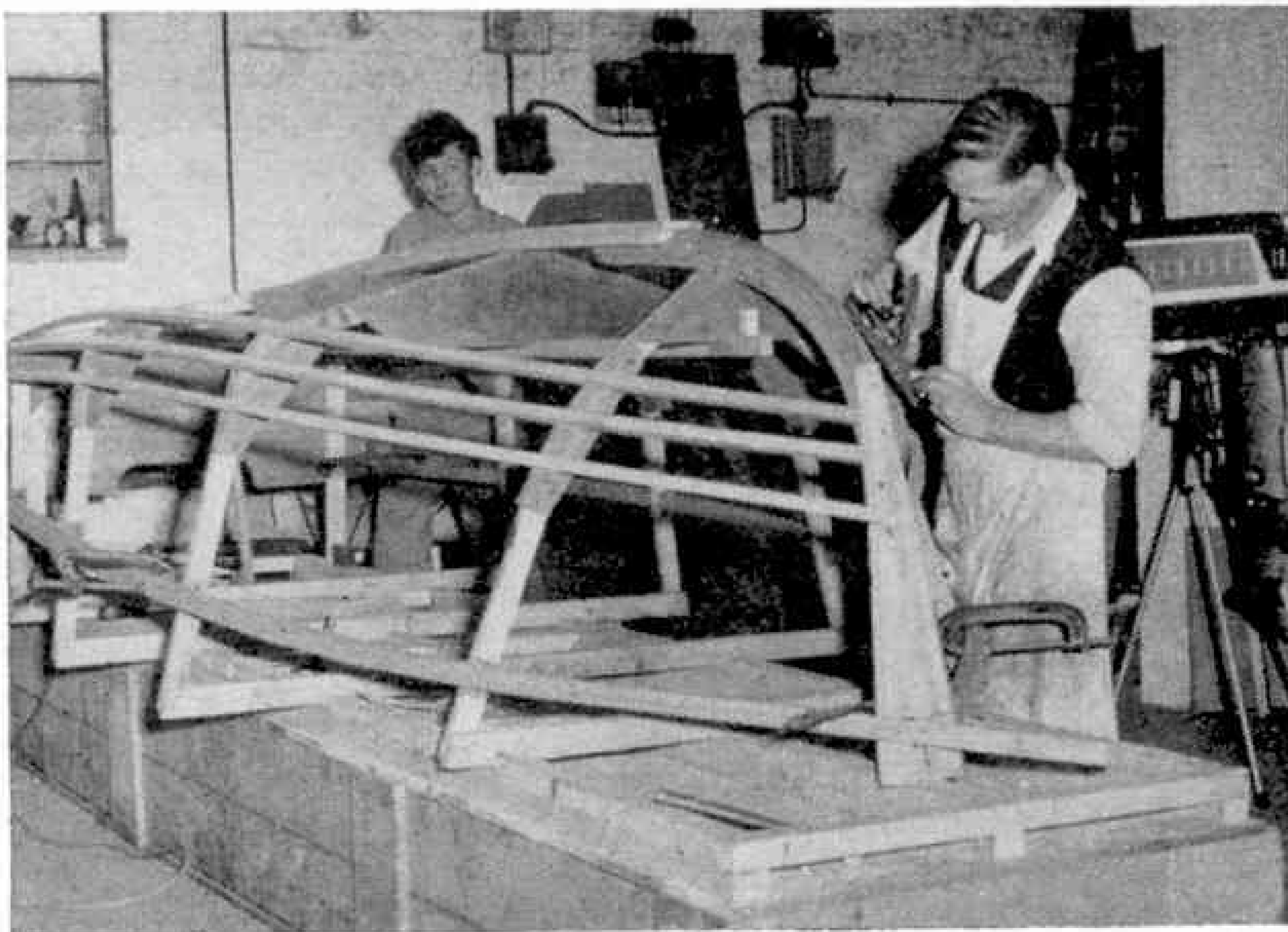
By J. V. Shilvock

IT is said that when Admiral Vernon walked in the English countryside, he always carried a pocketful of acorns. These he would scatter in likely spots, to ensure that there would never be a shortage of oaks for the "wooden walls" of England.

Times changed, and the small boatyards that once abounded disappeared, as vessels became bigger and dockyards were centralised at such places as Clydeside, Liverpool and Birkenhead, and Belfast. A few craftsmen carried on with the small boats, but such concerns were largely family run, and catered only for fishermen, etc.

Now the pendulum has swung with a vengeance, and boatbuilders are finding it all they can do to train sufficient apprentices to cope with the ever-growing demand for sailing and other light craft.

Mr. L. F. Bryant, one of the boatbuilders of a Stourport-on-Severn yard, Midland Marine Ltd., of Bridge Boatyard, Stourport,



A 12 ft. 6 in. boat taking shape on a "packing case" bench. It is one that can be built by "Do It Yourself" enthusiasts from prefabricated parts in a kit.

which stands in the shadow of the huge arch of the Bridge over the Severn, comes of a family that once made small naval vessels at Rye. He came to the district some eight years ago, and for the past two years has been helping build boats and train apprentices, with his associates Ron and Ray Ready. An associated company runs hire cruisers for the many summer visitors to the town, and there I saw fibre glass boats being constructed for this work during the course of a visit. In this a wooden boat is first built and a fibre glass mould constructed on its exterior by the application of alternate layers of waterproof resin

and glass fibre. Various chemicals are mixed with the glues. These include "accelerators," to keep the cold glue from hardening while working, and a catalyst that, when

(Cont. on page 472)



A modern two-berth cabin cruiser, "Sea Knight", shows her paces in works trials on the Severn between Stourport and Bewdley.

MECCANO MAGAZINE



IT seems that there are only two out of the hundreds of church clocks in England that forsake figures and instead have the letters of words making up a miniature sermon.

One of these, that shown in the accompanying photograph, is at Westacre, Norfolk. The maker of this put on the dial the letters of WATCH AND PRAY, which is very appropriate for a church clock. A second clock of this kind is at Wootton Rivers, Wiltshire, where a village craftsman produced a timepiece for the church and lettered its dial GLORY BE TO GOD.

There are also two other lettered faces to church clocks. One at Baslow, Derbyshire, says VICTORIA 1897; the other, at Buckland-in-the-Moor, Devonshire, is inscribed MY DEAR MOTHER.

I am very glad to have the opportunity of showing you the lower picture on this page. It reached me from Dr. H. Enrique Ferrand, of Argentina, with a moving expression of his appreciation of Meccano. This you will understand when I tell you that the

Junior Section

smiling little girl in the picture is Susanita, his daughter, who contracted poliomyelitis in May 1956, and has a left leg that is still infirm.

Some way of exercising the leg was needed to help her to recover, and this Dr. Ferrand has provided by constructing the Meccano mechanism seen in the picture. Susanita's left foot rests on a sliding carriage connected to a weight, and

she gets the necessary exercise by pushing the carriage forward to raise the weight, which, of course, restores it to the original position when she releases the pressure of her foot.

Susanita has been using this mechanism for one to two hours daily during the last ten months or so. It has done a very large amount of work and is still going strong.



Spanner's Special Section For Juniors

Easy Model-Building

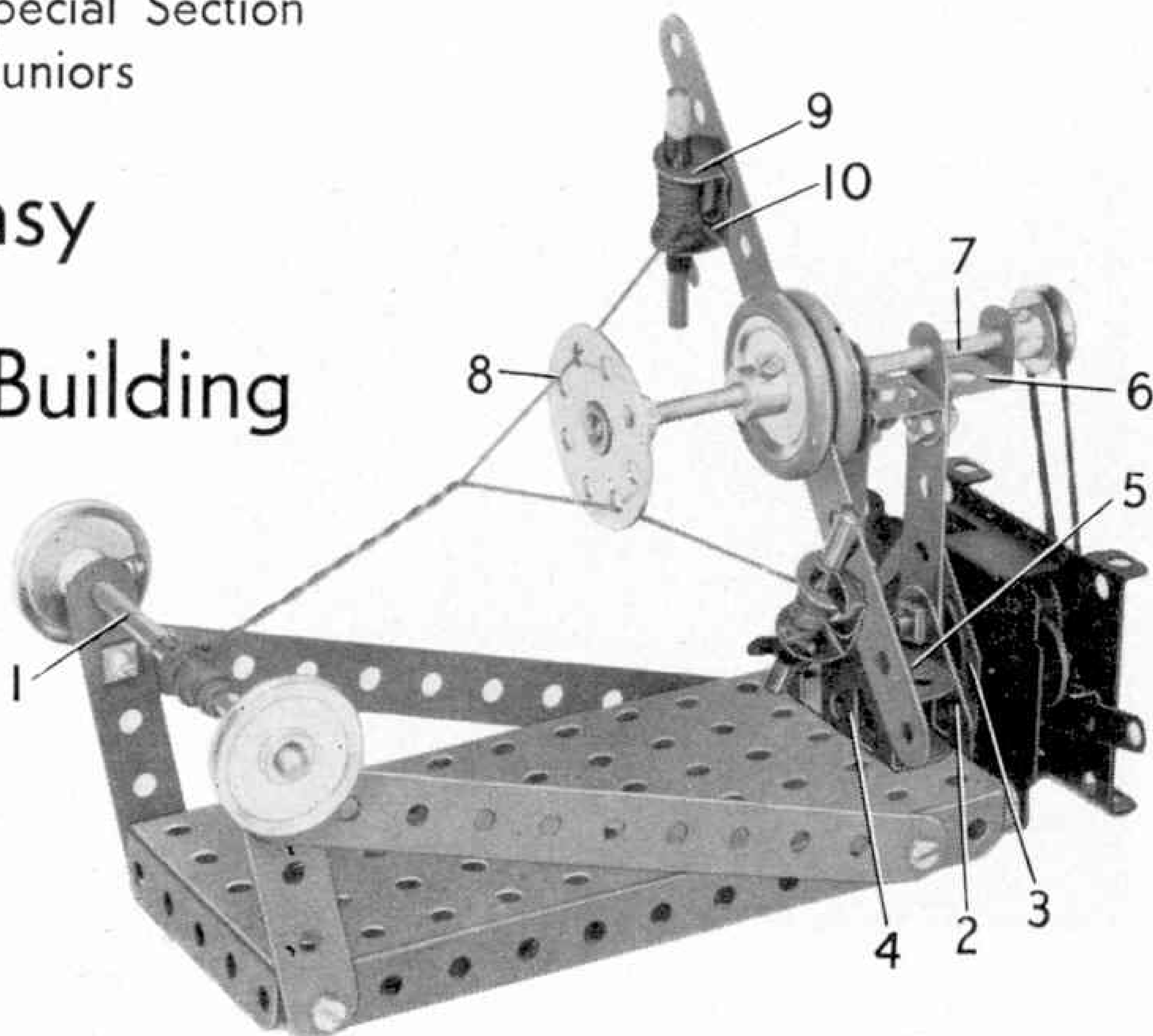


Fig. 1. A simple but interesting Wire Twisting Machine that can be built with parts in Outfit No. 1, with the addition of one No. 23a $\frac{1}{2}$ " Pulley.

Wire Twisting Machine

The little machine shown in Fig. 1 is designed for twisting together two separate strands of wire. It can be built from parts in Outfit No. 1. To each side of a $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate a $5\frac{1}{2}"$ Strip is bolted. The other end of each Strip is bolted to a $2\frac{1}{2}"$ Strip that is also bolted to the side of the Flanged Plate as shown. The $2\frac{1}{2}"$ Strips carry a $3\frac{1}{2}"$ Rod 1, which is held in place by two 1" Pulleys.

At the other end of the Flanged Plate two Flat Trunnions 2 and 3 are bolted and also two Trunnions 4 and 5. To these, two $2\frac{1}{2}"$ Strips are bolted vertically. The $2\frac{1}{2}"$ Strips are joined near their upper ends by two Angle Brackets as indicated, and the bolt that holds one of the Angle Brackets to the Strip is used to fix also a $\frac{1}{2}"$ Reversed Angle Bracket 6.

A $3\frac{1}{2}"$ Rod 7 is passed through the end holes of the $2\frac{1}{2}"$ Strips and the Reversed Angle Bracket and is fitted with a $\frac{1}{2}"$ Pulley at the rear end and a Bush Wheel 8 at the front end. Also on the Rod are a $5\frac{1}{2}"$ Strip and two 1" Pulleys fitted with Rubber Rings. The Rod passes through the centre hole of the $5\frac{1}{2}"$ Strip and the 1" Pulleys are pressed tightly against each side of the Strip

so that the Rubber Rings grip the Strip and hold it firmly in place. A bolt is now passed through the third hole from each end of the $5\frac{1}{2}"$ Strip and is fitted with a nut. Two Angle Brackets 9 and 10 are then placed on the bolt; finally, a second nut. The nuts are then tightened against the Angle Brackets to grip them tightly, and it must be noted that the bolt must be free to turn in the Strip. A 2" Rod is passed through the holes of each pair of Angle Brackets and is held in place by Spring Clips. A length of Cord is now tied to the centre of each of these Rods and then wound on to the Rod. The ends of each Cord are passed through opposite holes in the Bush Wheel 8 and then tied together on the Rod 1.

A *Magic Motor* is bolted to the rear end flange of the Flanged Plate, and is connected by a Driving Band or a Cord belt to the $\frac{1}{2}"$ Pulley on the Rod 7.

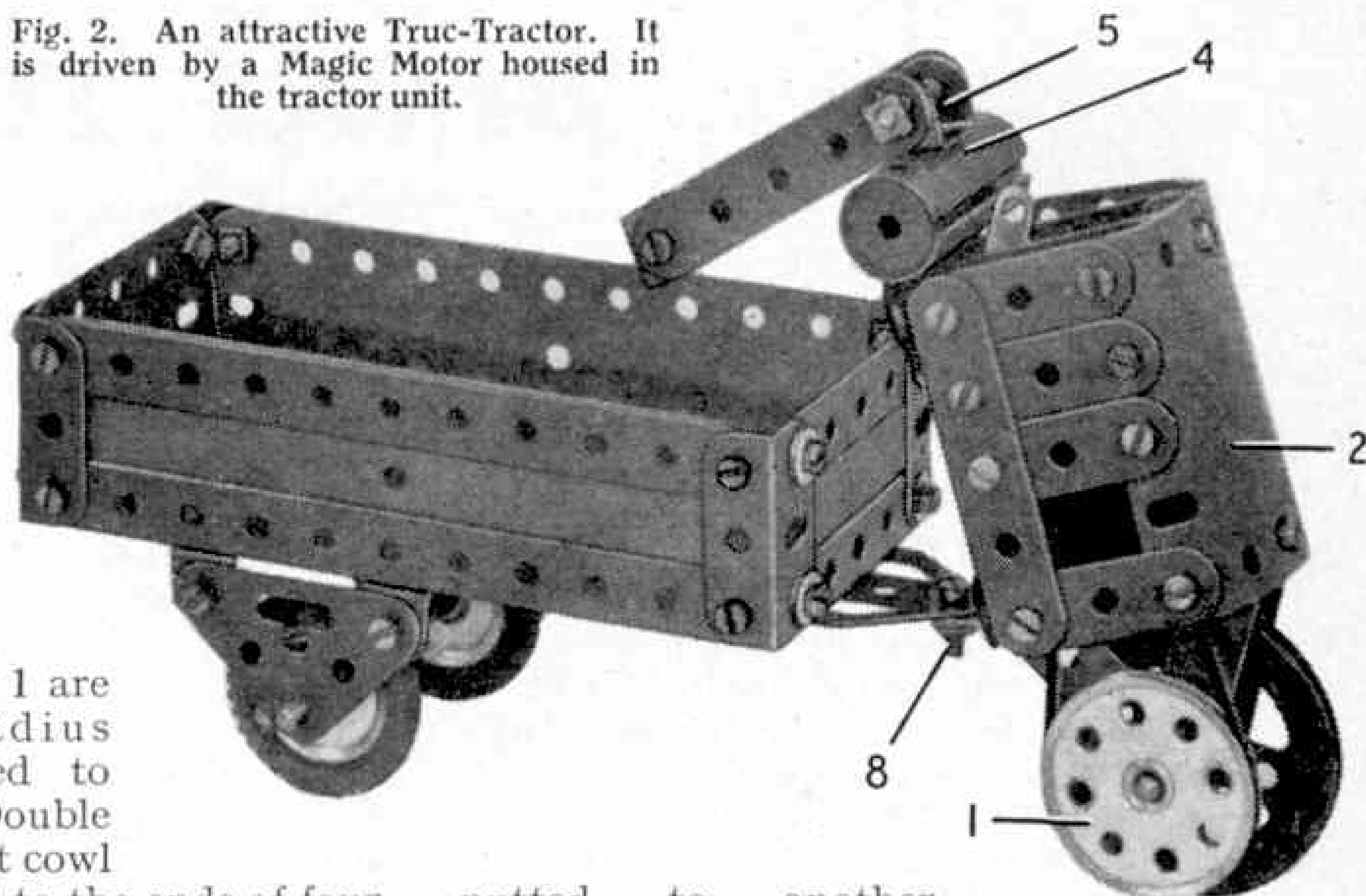
Parts required to build the Wire Twisting Machine: 3 of No. 2; 2 of No. 5; 6 of No. 12; 2 of No. 16; 2 of No. 17; 4 of No. 22; 1 of No. 23a; 1 of No. 24; 4 of No. 35; 21 of No. 37a; 18 of No. 37b; 6 of No. 38; 1 of No. 40; 1 of No. 52; 2 of No. 111c; 1 of No. 125; 2 of No. 126; 2 of No. 126a; 2 of No. 155; 1 *Magic Motor*, which is not included in Outfit No. 1.

Truc-Tractor

To commence the construction of the Truc-Tractor a Double Bracket is bolted to the side of a *Magic Motor* at each of its corners. The bolts that hold the two lower Double Brackets hold also four 2" Strips that are the bearings for a $1\frac{1}{2}$ " Rod on which a 2" Pulley and a $1\frac{1}{2}$ " Pulley 1 are mounted. A $1\frac{1}{16}$ " radius Curved Plate 2, bolted to the front pair of Double Brackets, forms the front cowl and a $2\frac{1}{2}$ " Strip 3 is fixed to the ends of four $1\frac{1}{2}$ " Strips, arranged as shown and bolted at their other ends to the Curved Plate 2. The Strips are arranged in this manner so as to allow space to insert the Winding Key for the Clockwork Motor. A $2\frac{1}{2}$ " x $1\frac{1}{2}$ " Flexible Plate forms the other side of the tractor unit.

The petrol tank 4 is bolted to the upper Double Bracket at the rear and the steering lever, which consists of two $2\frac{1}{2}$ " Strips and a Double Bracket, is lock-

Fig. 2. An attractive Truc-Tractor. It is driven by a *Magic Motor* housed in the tractor unit.



nuted to another Double Bracket 5 so that it can move up and down.

The rear lower Double Bracket 6, which is bolted to the *Magic Motor*, is connected to a Fishplate 7.

The base of the truck body is a $5\frac{1}{2}$ " x $2\frac{1}{2}$ " Flanged Plate, to each longer flange of which a $5\frac{1}{2}$ " Strip and a $5\frac{1}{2}$ " x $1\frac{1}{2}$ " Flexible Plate are bolted. A vertical $1\frac{1}{2}$ " Angle Girder at each corner strengthens the structure, and the front and rear sides are each formed by a $2\frac{1}{2}$ " x $1\frac{1}{2}$ " Flexible Plate and two $2\frac{1}{2}$ " Strips.

The wheels are 1" Pulleys fitted with Tyres, and they are mounted on a 3" Rod, which has its bearings in two $1\frac{1}{2}$ " Corner Brackets that are bolted to two $2\frac{1}{2}$ " x $\frac{1}{2}$ " Double Angle Strips. The Double Angle Strips are bolted across the underside of the Flanged Plate and at a distance of 2" apart.

The truck and tractor units are connected together by a lock-nutted $\frac{3}{8}$ " Bolt 8 that passes through the Fishplate 7 and also through a Flat Trunnion that is bolted to the front of the truck.

A 6" Driving Band is passed around the pulley of the Motor and the $1\frac{1}{2}$ " Pulley 1.

Parts required to build the Truc-Tractor:—4 of No. 2; 7 of No. 5; 4 of No. 6; 4 of No. 6a; 4 of No. 9f; 1 of No. 10; 6 of No. 11; 1 of No. 16b; 1 of No. 18a; 1 of No. 20a; 1 of No. 21; 2 of No. 22; 55 of No. 37a; 51 of No. 37b; 16 of No. 38; 2 of No. 48a; 1 of No. 52; 1 of No. 111; 1 of No. 111c; 1 of No. 126a; 2 of No. 133; 2 of No. 142c; 1 of No. 163; 2 of No. 164; 1 of No. 186a; 3 of No. 188; 2 of No. 189; 1 of No. 200; 1 *Magic Clockwork Motor*.

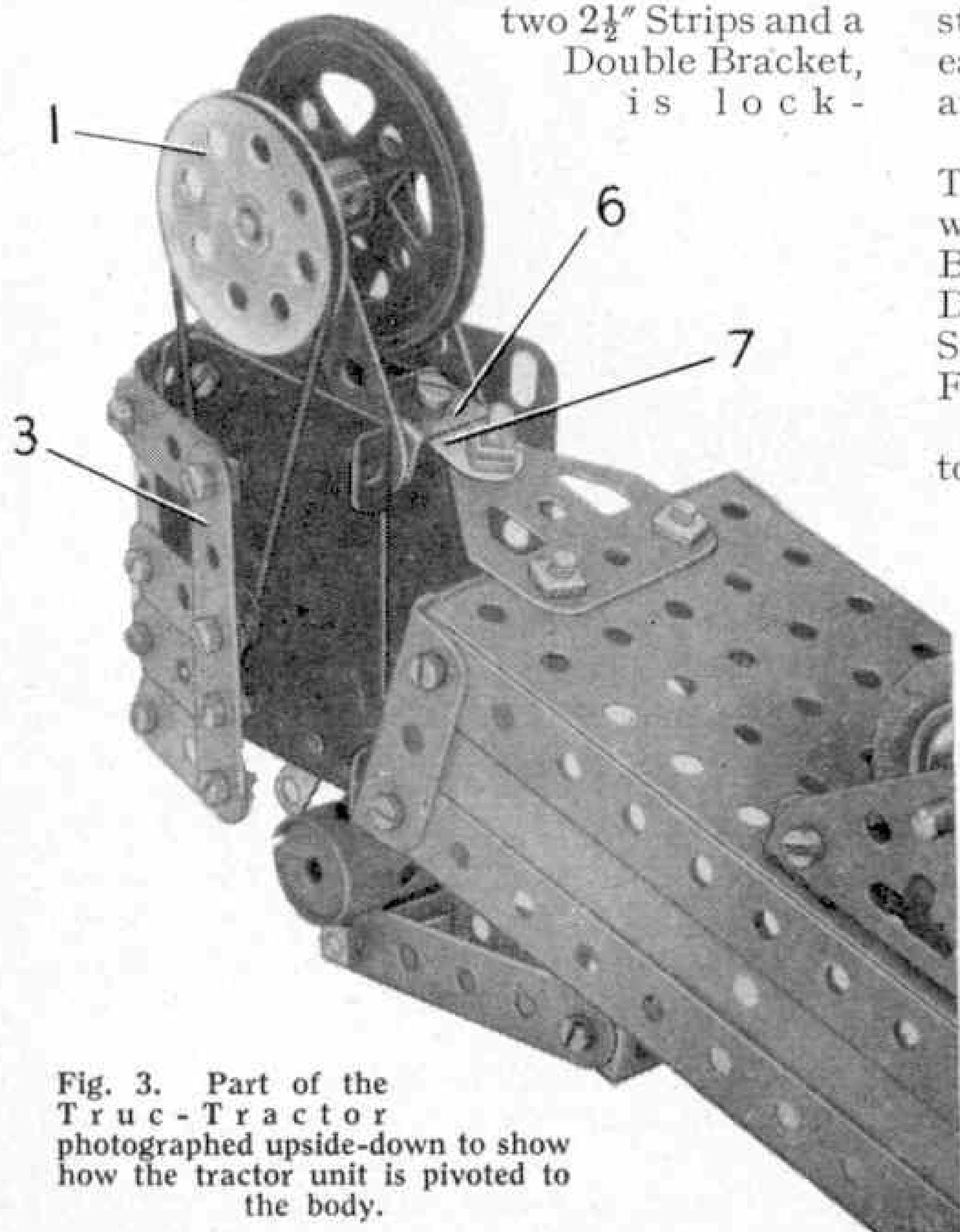


Fig. 3. Part of the Truc-Tractor photographed upside-down to show how the tractor unit is pivoted to the body.



DINKY TOYS

NEWS

By THE TOYMAN

WHEN the B.B.C. TV Roving Eye Vehicle (Dinky Supertoys No. 968) first appeared, soon to be followed by the B.B.C. TV Mobile Control Room (No. 967), the two vehicles set a new line in Dinky Toys collecting and thousands of keen enthusiasts everywhere were soon clamouring round the dealers' shops, anxious to see the new vehicles and obtain them for their collections. Now the range of television broadcast vehicles has been extended even further by the introduction this month of a B.B.C. TV Extending Mast Vehicle, Dinky Supertoys No. 969, and with the complete set you can run your own outside broadcasts.

This attractive vehicle has a particularly exciting feature—an extending telescopic mast, on top of which is a miniature paraboloid radio link beam aerial. The mast on the real vehicle is capable of raising the paraboloid to a height of 60 ft. The Dinky Supertoys miniature is accurately modelled. Its aerial is moulded in plastic and mounted on a swivel so that it can be turned in any direction. It is great fun to raise it and direct it towards the station from which its signals are to be transmitted.

The vehicle is finished in dark green, with a grey flash on each side surmounted by the B.B.C. coat of arms. The mast itself is operated from two handles at the rear of the vehicle. One of these controls the

extension of the upper mast section, while the other controls the elevation of the lower section from the horizontal position to the vertical.

A new addition to the Dublo Dinky Toys range is the A.E.C. "Mercury" Tanker. This is a medium-sized tanker representing in Hornby-Dublo scale one of 2,000 gallons capacity. A forward drive cab leaves plenty of room for the tank section, which is built to modern profile with attractive detail, especially along the tank top, where the usual

catwalk, manholes and filling valves are represented. The cab is green and the tank red, each side carrying a "Shell-B.P. Petroleum Products" transfer. It is just the thing for any Hornby-Dublo system including a road layout.



Elaine and Russell Baxter, Whangarie, New Zealand, are both Dinky Toys enthusiasts and are seen here with part of their collection.

Last month I mentioned the new Dinky Toys Road Hoarding. This is now available, and I am including a picture of it in an attractive layout here. Two or three of these excellent accessories give splendid realism to a layout and I am sure that every Dinky Toys collector will be keen to add one or more of them to his stock as soon as possible. The Road Hoarding is listed as Dinky Toys No. 765.

In the picture at the bottom of the next page is an ingenious answer to the problem of storing Dinky Toys in such a way that they cannot be damaged by scratching. Andrew and Benjie Stevens of Kampala, Uganda,



What a splendid effect the new Dinky Toys Road Hoarding (Dinky Toys No. 765) gives when it is included in a town layout. You can use it with equal success, and it will help to make your displays completely realistic.

East Africa, seen in the photograph, are obviously very proud of their storage case, made by a local carpenter and given to them as a Christmas present.

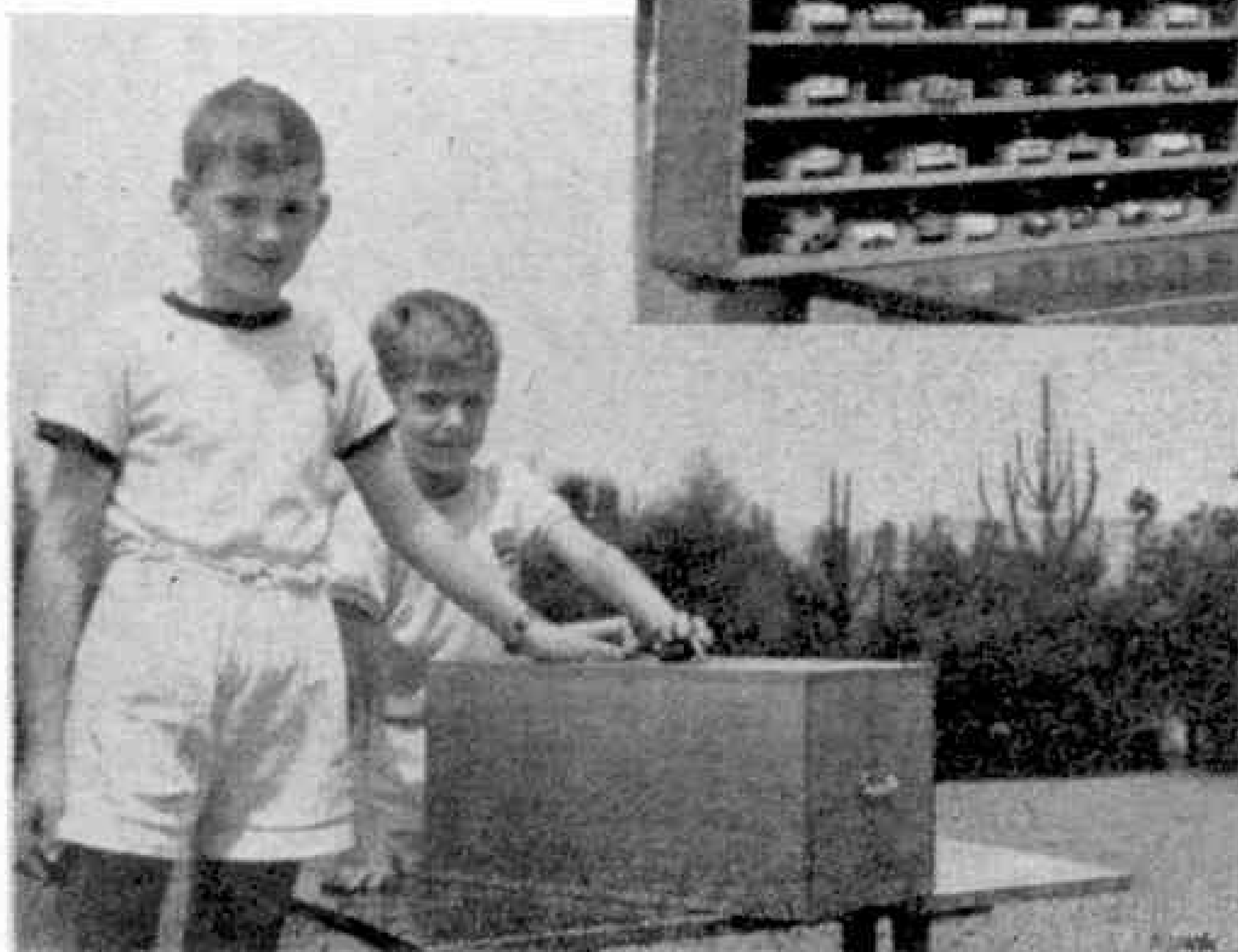
The box is in two halves, hinged in the centre. Each half is fitted with shelves, and each of these has a number of separate compartments to receive the Dinky Toys. When closed the box is portable, as it has a handle by which it can be carried.

Andrew and Benjie are both keen collectors of Dinky Toys, and many enthusiasts would no doubt like to follow the example they have set. Those who cannot have a special cabinet made need not be discouraged.

Any sound wooden box of sufficient size can easily be fitted with divided shelves and a hinged door. So why not try to make one yourself? A good, safe storage box for your Toys will pay hand-

some returns for the little trouble needed to make it.

The photograph reproduced at the top of the next page shows a layout for Dinky Toys that I made up recently and in which I made every effort to reproduce an actual situation in which real vehicles might find themselves.



Andrew and Benjie Stevens, Kampala, East Africa, seen with the fine storage cabinet for their Dinky Toys. The cabinet was made for them by a local carpenter.



This fine rural highway layout has everything—a bridge, a garage and plenty of room for Dinky Toys vehicles of all kinds. Prominent in the centre of the picture is the Triumph Herald, Dinky Toys No. 189.

A Car Salesroom on a main urban road has been made the centre of the layout. Touches of realism are added to the building by posters advertising various makes of cars. A new Rolls Royce Silver Wraith can be seen in stock.

The scene is backed by buildings, fields and hedges painted on a backcloth, while the road itself is lined on one side with trees. The presence of two hikers also helps to make the setting as convincing as possible.

Note how up-to-date the layout is. In the left foreground is a flyover road, while the Triumph Herald and the Rolls Royce Silver Wraith are both recent introductions.

Now what about the time and season of our layout? The big cotton-woolly clouds suggest summer-time, as does the foliage on the trees and bushes. The hikers also add to the general air. The refuse wagon, and the lady with the little boy, combined

with the light traffic all suggest a mid-morning scene. A little attention to details of this kind, with everything in complete harmony, always strengthens the realism of a layout.

And now for some news about the Dinky Toys Club. I am pleased to say that in spite of the difficulties caused by the delay in the printing and delivery of the new Dinky Toys Collector's Licences, through the dispute in the printing industry, we have now managed to catch up with the thousands of applications that were received from enthusiastic Club members and collectors generally, but new applications are still pouring in each day. These are all being dealt with as rapidly as possible and the special Department at Binns Road, which is dealing with the applications, has been working overtime for many weeks!



The new B.B.C. TV Extending Mast Vehicle, Dinky Supertoys No. 969.

"Tommy Dodd"
writes about:

A Good Garden Railway

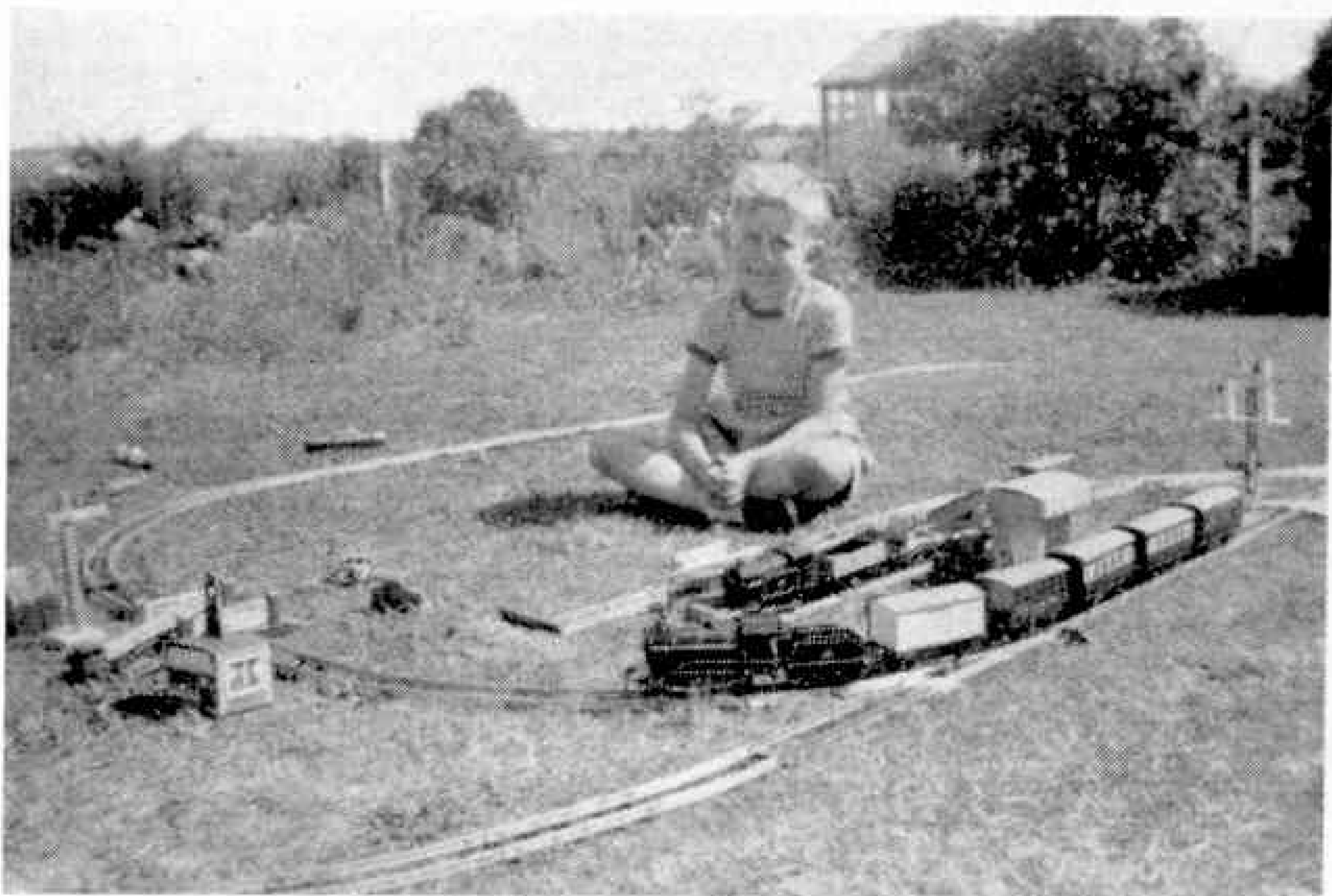
EVEN by the time that you read this issue of the *M.M.* there may still be a few opportunities of using your Hornby railway equipment out of doors. But even if you cannot do so, you will be interested in the picture on this page of Raymond Flintoft, Acomb, a Hornby railway owner whom you have met in a previous issue, enjoying himself with his trains in the garden.

Outdoors there is more space for things than indoors, where we saw our friend before, and he has made good use of a spacious level site for his line. Raymond's father told me recently that one or two improvements were in mind, so I expect various additions have been made by now. The details that follow are based on notes submitted by Mr. Flintoft, who takes a keen interest in the railway. This naturally helps its progress and provides guidance for Raymond, who has some quite decided ideas on layout arrangement.

The photograph reproduced on this page was taken to show as much as possible of the layout, which provides for continuous running and has two sidings and a branch line. The Points leading to the two sidings where the goods train is standing are just outside the picture, but one thing that does show, near the Junction Signal on the right-hand side, is a home-made level crossing without gates. This is made from a piece of wood, wide enough to take a Dinky Supertoys vehicle, grooved for the rails to fit into and shaped to give a lead-up to the surface of the crossing, which, of course, is level with the rail heads. Care had to be taken in making it to ensure that the grooves were wide enough to admit the flanges of the train wheels, otherwise there would be derailments. Such a crossing is useful in places, but there is also a

standard Level Crossing with gates prominent in the foreground of the illustration, with a Dinky Toys Lorry with Chains passing over it.

The Coaches forming part of the passenger train on the main line in the picture bear Hornby-Dublo Destination Board Labels, which, of course, is effective as well as correct. The destinations are changed to suit whatever scheme of running the owner chooses to follow. You will notice too that there are two freight Vans behind the

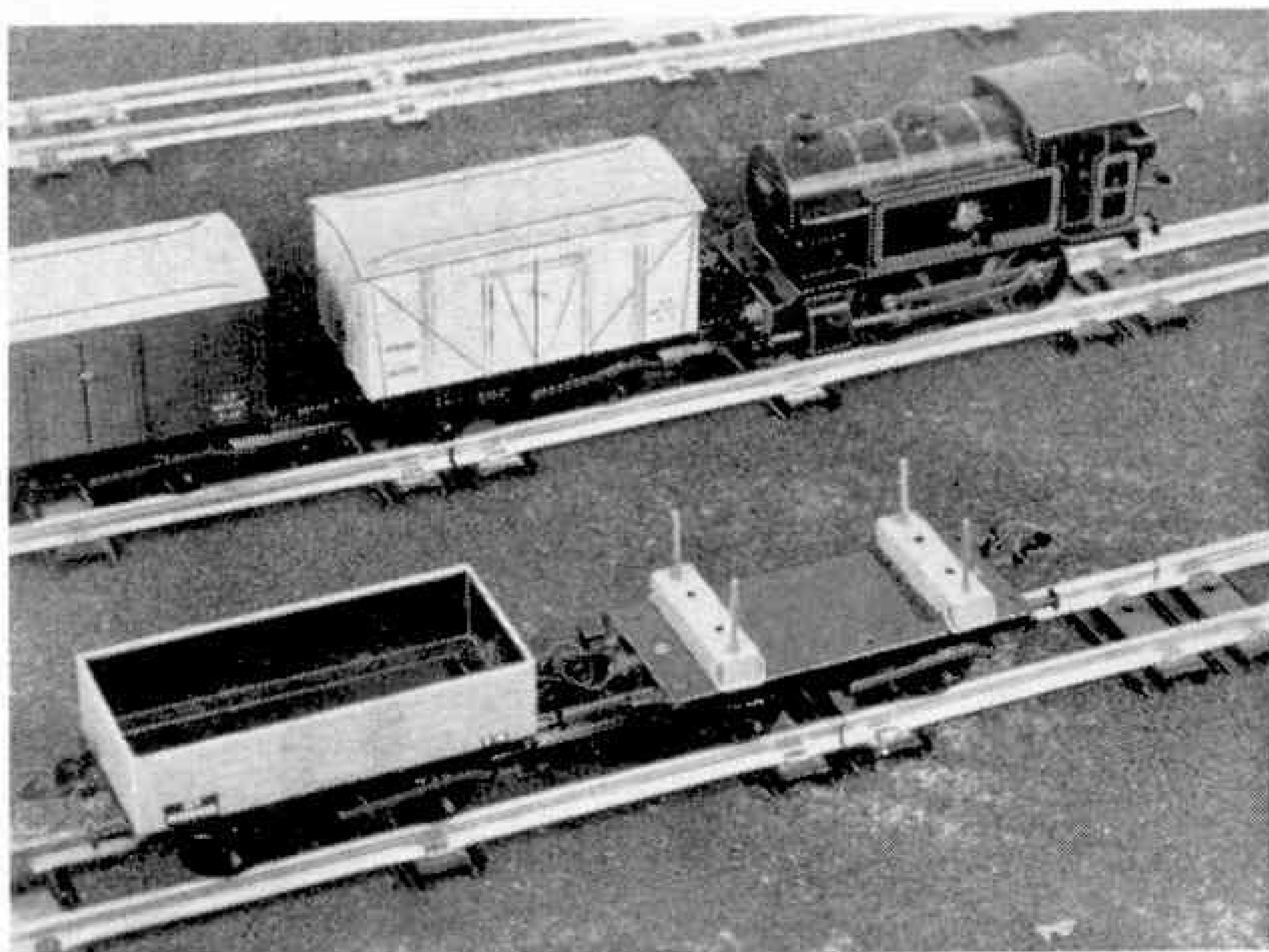


Raymond Flintoft enjoys using his Hornby Railway in the garden. In addition to the trains, there are plenty of lineside items to provide realism and good fun.

tender. Evidently these are conveying urgent traffic, and so they have been attached to a passenger train to avoid delay.

I understand that had more time been available the layout could have been improved with Meccano models such as a crane and a windmill, which are often used, and with more Dinky Toys. Still, there is quite a show and I have no doubt that the owner and his sister, who sometimes lends a hand, were able to have plenty of fun with it.

This railway is a fine example of a layout in which the trains themselves do not form the only interest. The use of level crossings means that attention is given to road traffic matters as we have already seen,



The No. 50 Open Wagon and the No. 50 Lumber Wagon are two of the most generally useful vehicles in the Hornby system. Hints on using them are given on this page.

while inside the circuit the Aveling-Barford Diesel Roller and a tipping truck are employed in "road making" operations.

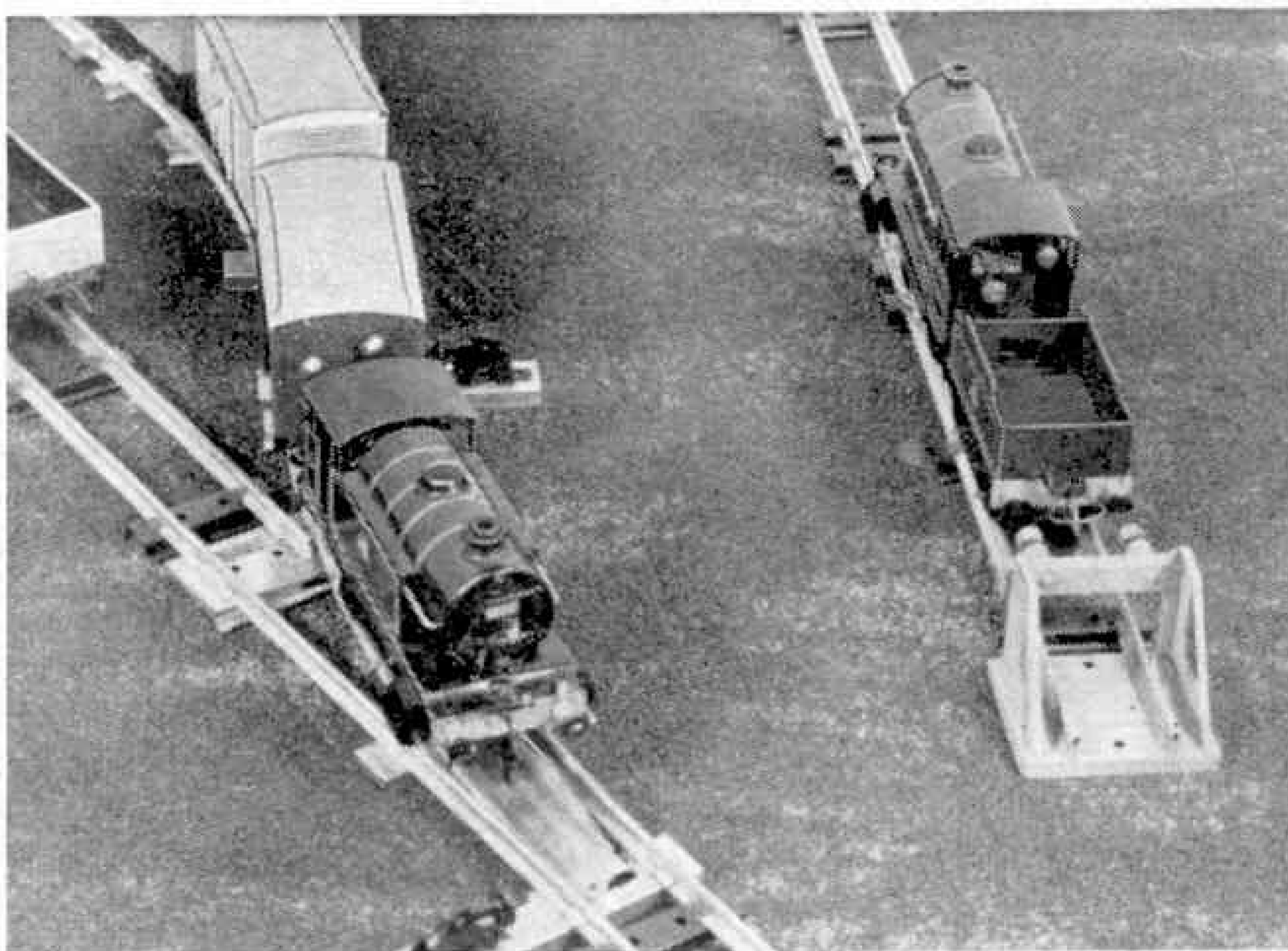
As on most Gauge 0 systems, the loading of wagons is an activity to which attention is given. That is why I have included our next picture in those for you to look at this month. This shows two of the most generally useful wagons for loading in the whole of the Hornby System, the No. 50 Open Wagon and the No. 50 Lumber Wagon.

The Open Wagon can be employed for carrying all sorts of things, many of which you can readily make for yourself at home. You can make cases of card, or can represent them with suitable blocks of wood if you do not wish to go to the trouble of making them up of separate strips. But you should attach narrow strips of wood or card to the blocks to give that proper "packing case" look to them. Those of you who are aeromodellers will not need to be told how to go about this sort of thing. You will have the materials ready to hand.

Any amount of variety

can be introduced in the boxes, barrels and bales that you make for the Open Wagon, and you can have equally good fun in fixing up suitable freights for the Lumber Wagon. This is a splendid vehicle for carrying miniature tree trunks, which you can readily reproduce with suitable "twiggy" pieces of wood and railwaying in the garden should provide plenty of opportunity for obtaining these. But be sure you have permission to do this sort of thing before you begin!

Another useful vehicle is the Hornby No. 50 Hopper Wagon, which can carry stones or, perhaps, coal. Stones could be used in connection with track ballasting operations, although it would be rather a big job to ballast the whole of the track and scarcely worth the trouble for a layout that is necessarily temporary. Still, you could ballast a short length just for a change from actual train running of the normal kind. Put a sheet of stout paper or something similar underneath the rails. Then the ballast can easily be removed at the end of the day.



A Hornby Buffer Stop is prominent in this picture, where it finishes off a siding in the correct manner.



Railway crossing with a turnstile. Do you know another one? Photograph by J. A. Fleming, Hampstead Heath.

THE number of unusual things that can be seen almost anywhere by those who really make use of their eyes is quite astounding. Even if one just keeps to a particular line there is almost always something new to be found by those who really look for the unfamiliar. Railways of course provide a splendid field for this kind of thing, and a very good example of this is seen in the illustration above. At level crossings foot passengers wishing to cross the track make use of a wicket gate when the main gates are closed. Here is one with turnstiles in place of wicket gates.

This interesting crossing is at Clifton, on a branch of the North Staffordshire railway that is now closed to traffic. It is the one from Ashbourne in Derbyshire to Uttoxeter in Staffordshire, where it joined the main

Of General Interest

line of the railway, and Clifton is the first station from Ashbourne.

There must be few stations with a turnstile such as this. One of them is Rocester, the next along the line from Ashbourne, and in each case the turnstiles, like the gates, are operated from the cabin, giving the signalman complete control. Perhaps some reader may know of another. If so, I shall be delighted to learn something about it.

My lower picture is a very striking illustration of the lifting power of the modern helicopter. The one seen in it is a Westland Westminster, and the Commer truck it is lifting has an unladen weight of more than 3 tons. This lift was one of the demonstrations given at the Paris Air Show at Le Bourget in June last, and the picture was taken during a "trial run" before the Show.



A Westland Westminster helicopter lifts a 3-ton Commer truck.

My Flight Round the World

By

B. B. Ardron



AS a boy I had longed to fly round the world, but then I little dreamed that when I did I should circumnavigate the globe within 80 days, with an actual journey time of only a few.

It all started last year in March, when business took me to Christmas Island, in the Pacific Ocean, some 11,000 miles away. At 1800 hrs.—6 o'clock in the afternoon—a beautiful DC7C was waiting at London Airport to pick up passengers bound for Idlewild Airport, New York. After safety belts had been secured, we made a smooth take-off. The lights of London Airport faded from our view, we caught a glimpse of the Bristol Channel, and soon we were off across the wide expanse of the Atlantic Ocean to the U.S.A., over 3,000 miles away. Our only contacts en route were with the weather ships *Julieta*, *Delta* and *Echo*.

Our estimated time of arrival at Idlewild was 0500 hrs. New York time. We saw the city 70 minutes ahead of schedule and made a perfect landing. We had to wait until 1330 hrs. to take off again, this time for San Francisco, and were fortunate enough to have a conducted tour round New York City. I was impressed by the wide dual "fairways", as they are called, as well as the tall skyscrapers, with the Empire State Building towering above them, and even more by the United Nations building, where we were shown round. This I found a magnificent structure with marble floors, beautiful woodwork in the Council Chambers, and a post office where only United Nations stamps can be bought and letters carrying them posted.

San Francisco was one of the ports of call of the author on the flight round the world he describes in this article. Our illustrations are reproduced by courtesy of B.O.A.C.

A DC7 took us from New York across the United States to San Francisco. On the way we had a change in weather, for in New York it had been drizzling, but in the Middle West we could see snow lying. Then over the magnificent range of the Rocky Mountains we flew, and by nightfall we were over San Francisco, where myriads of lights greeted us and we could see the Golden Gate Bridge, the structure with the longest suspended span in the world, which also was brightly lit.

Now we had to change over to another aircraft very quickly, this time a DC6B, and we were airborne again almost immediately, this time bound for Honolulu 2,500 miles away. We arrived there very tired, but anxious to see the Hawaiian Islands with their volcanic structure. As we left the aircraft we realised that we were well and truly in the Pacific, for the change in climate was very noticeable. The temperature was around 70 deg. F., and the atmosphere was very humid. We did not stay long. After a brief glimpse of Honolulu we were once again crossing the wide expanse of the Pacific Ocean to Christmas Island, half way round the world, a distance covered in two and a half days.

Eventually I went to work on a small island called Malden, 400 miles south of Christmas Island, and to reach it I had to cross the Equator. When we were about 150 miles from Malden the Dakota in which

I made the flight—I was the only passenger—developed engine trouble. The port engine failed completely and there was nothing we could do but fly on to the island on one engine, where the pilot skilfully made a perfect landing on the very meagre airstrip.

When my work was finished and I was

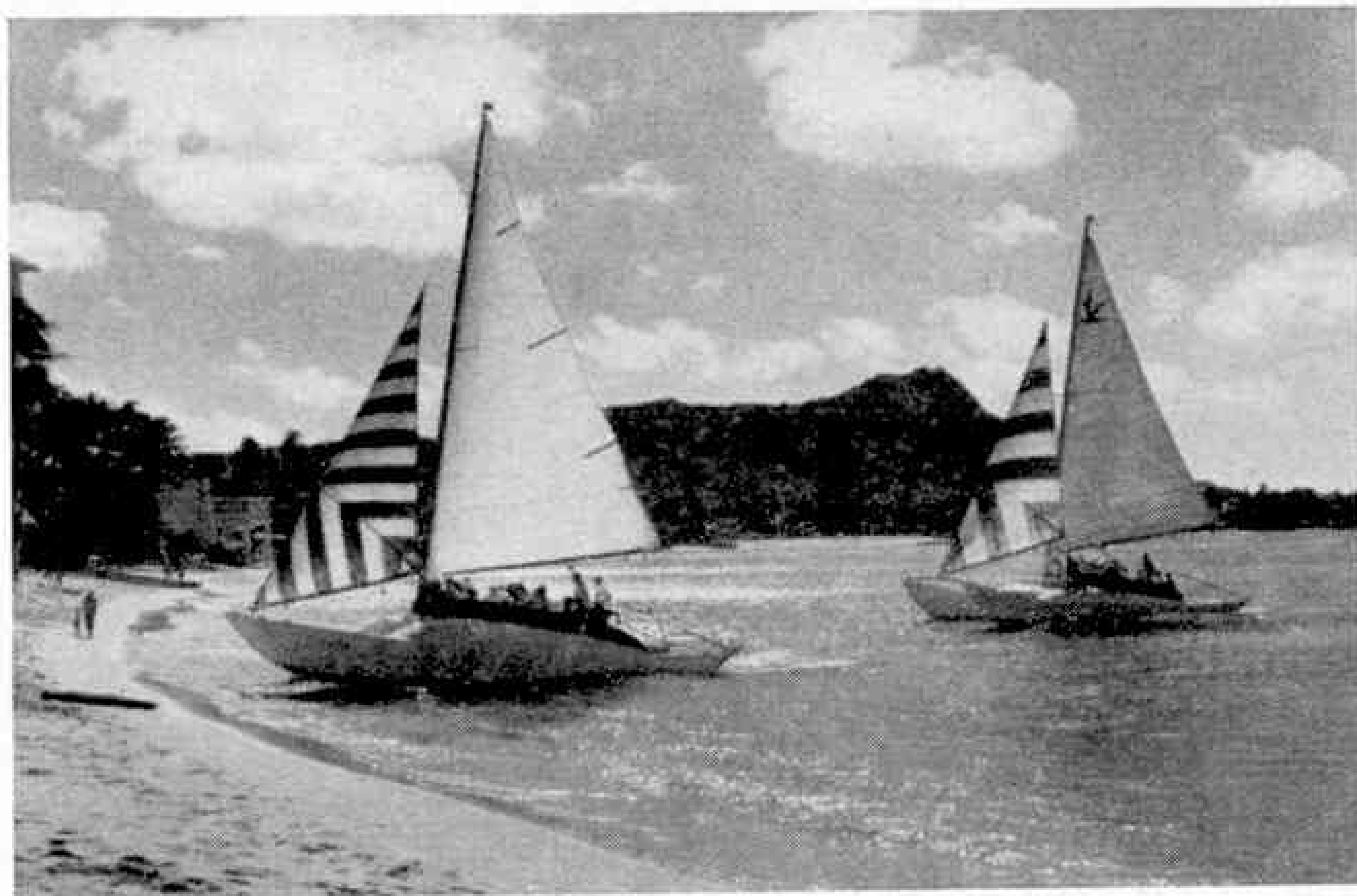
Nandi Airport in Fiji a whole day later, but only four hours' flying time from Canton! The Fijis are beautiful, with seemingly countless reefs and islands, palm trees in abundance, a lovely climate and, most of all, wonderful people.

The next day we went on to Brisbane and then Adelaide, the garden city of Australia, where we stopped for two days. The summer was just drawing to a close and everywhere looked so clean and fresh. It was there that I saw a show of magnificent Australian cattle and horses, and on leaving we flew over the back country and saw the sheep stations scattered far and wide over the land. We were then on our way to Port Darwin passing over Alice Springs during the flight.

Now came a rough passage, with solid cloud up to 50,000 ft. all the way to Labuan

in North Borneo. We had to fly at 14,000 ft. on oxygen, as the Hastings is not equipped with pressurised cabins, and we had to be sure that we cleared the mountains over the Celebes, which are noted for fairly high ranges.

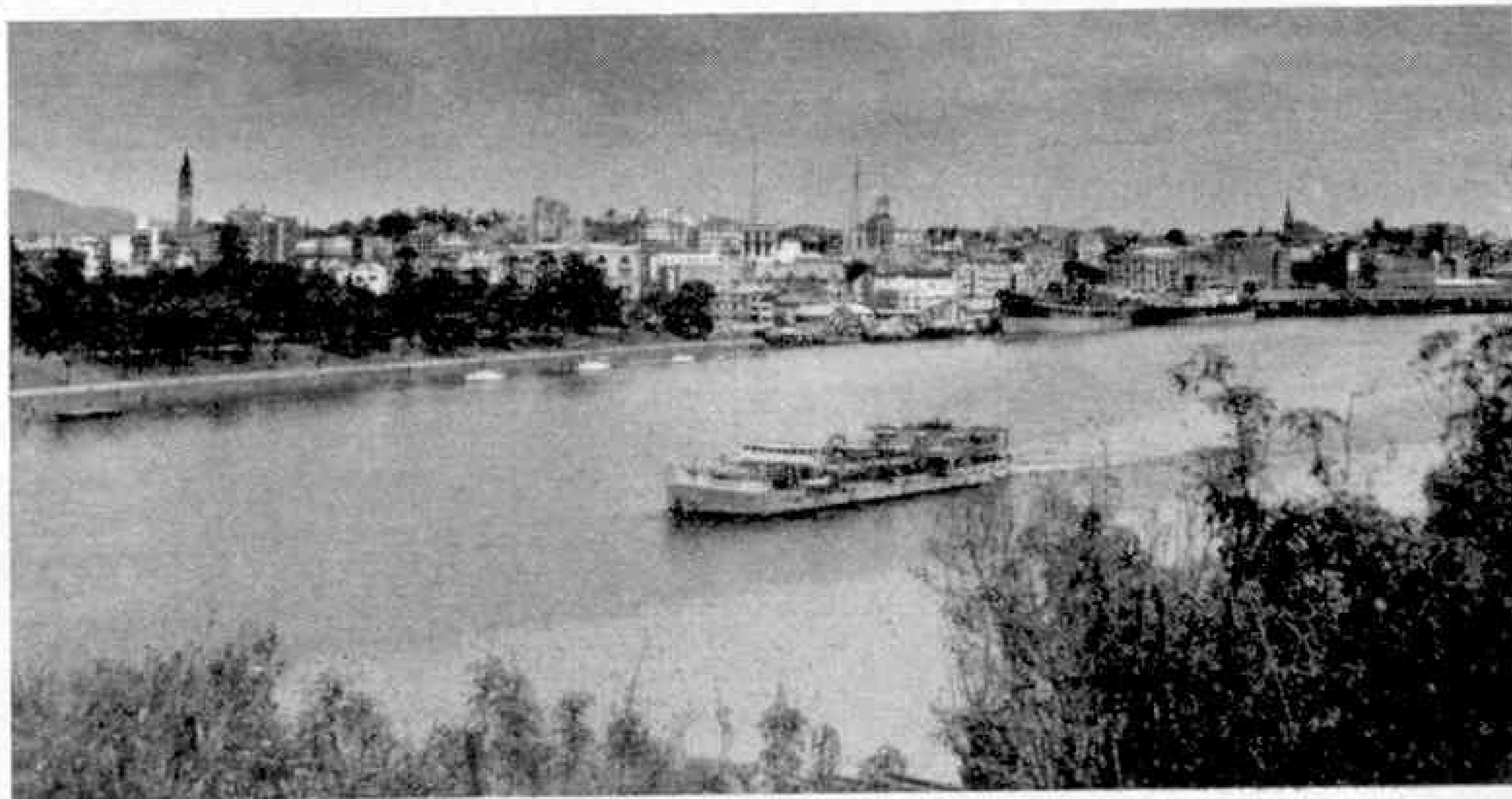
After a meal and re-fuelling in Borneo we carried on to Singapore, where we stayed two days. Over the ocean again to Ceylon for a night's stop, and then on to Karachi, where a dust storm was encountered and



On to Honolulu, where catamarans can be seen sailing off Waikiki Beach, as in the above picture.

due to return to the United Kingdom, to my joy I was given a seat on an R.A.F. Hastings of Transport Command which was going to Australia, from which another Hastings was to take me to Lyneham in England. On Sunday, 2nd May, we took off from Christmas Island and set off across the Pacific Ocean once again. We re-fuelled at Canton Island, in mid-Pacific, and carried on to the Fiji Islands, crossing the Date Line in the meantime and so arriving at

Many stages later the author came to Brisbane, the capital of Queensland.





An interval in Ceylon, where elephants can be seen bathing in the river at Kandy.

took us over the Turkish mountains. And what a sight those mountains were. I managed to take one or two colour photographs despite the fact that it was very hazy, but the mountains were so rich in colour that it was worth it, and the results were quite reasonable. At last we arrived at Nicosia, where we re-fuelled before leaving for Malta, our last port of call

we had to try three times to land, which we eventually did in very poor visibility. Dust was everywhere, on our clothes, our beds at night and even on our food. Still pressing on, we were able next to take off again for Habbaniya, in Iraq, flying over the hot Persian Gulf. In Habbaniya we were greeted by a temperature of 120 deg. F. in the sun. In fact it was so hot that on washing a pair of slacks they were dry within five minutes.

We were not allowed to fly to Cyprus over Egypt or Syria, so our next flight

before we reached home, and we landed at Luqa for a night's stop.

Next day we started on the last lap of our long journey. Soon we were crossing the coast and flying north across France. As we approached Paris we went into solid cloud again and over Lyneham it was still solid, so we had to come "in" on the beam. Soon we were on English soil again.

So, like Jules Verne's hero, I had travelled round the World within 80 days, and covered over 30,000 miles. But I had actually been travelling on only 14 days.



One stage in the western flight brought the author to Karachi, the capital of Pakistan. This picture shows the Frere Hall Gardens and the Museum in the city centre.

Meccano Picture Competition

Still Time to Send in Entries

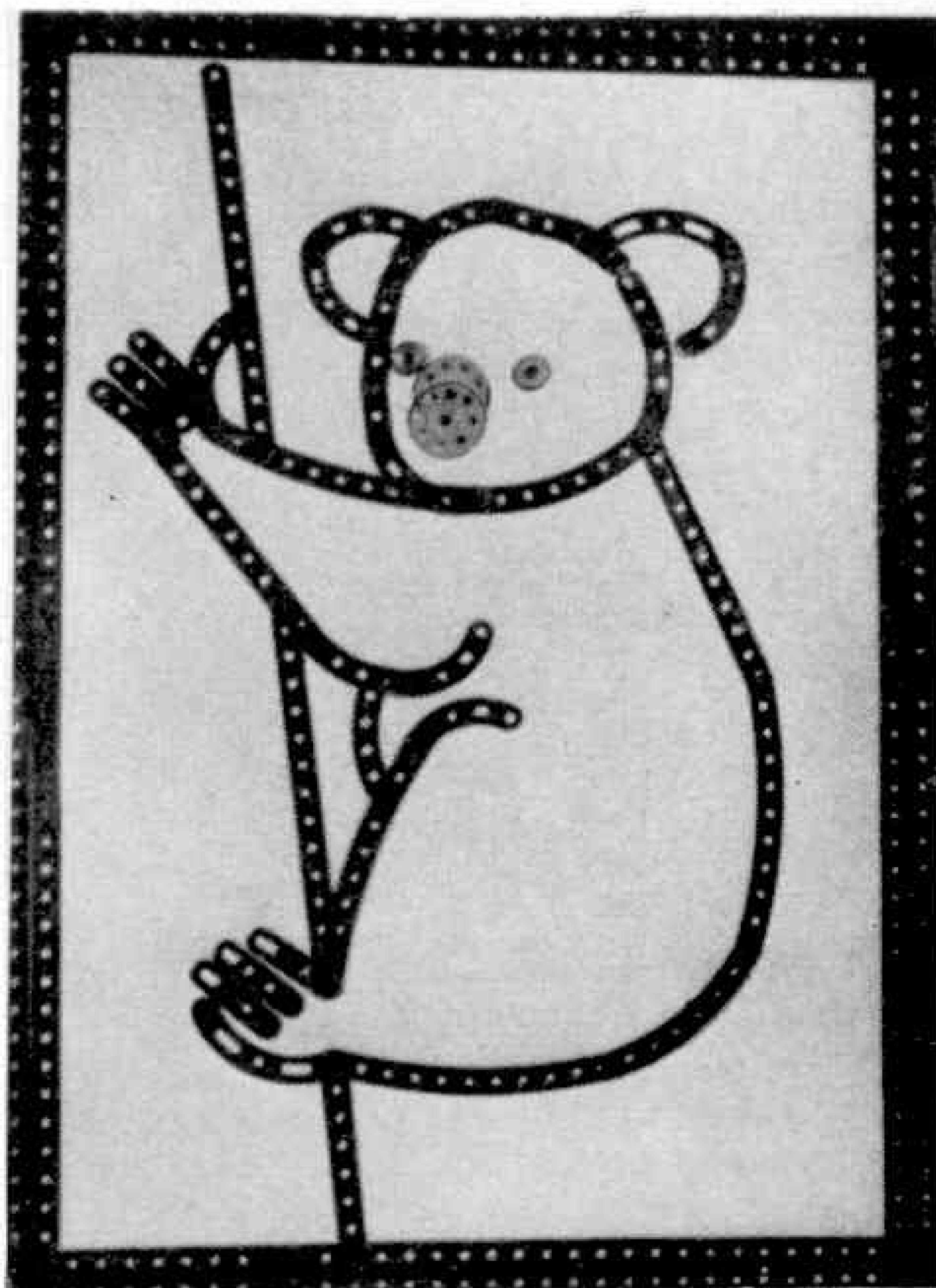
THIS competition, full details of which were first announced in the September *Meccano Magazine*, offers a pleasant change from ordinary model-building and with the return of the shorter days and the longer evenings indoors it is just the thing to while away a few happy hours.

On this page appears a picture of a bear climbing a pole. This picture, including the frame, is made entirely from simple Meccano parts bolted to a piece of cardboard that serves as a background. Only a very few parts have been used, yet a most realistic effect has been obtained.

It will readily be seen that there is great scope for making other attractive pictures by this means, and in this Competition we are offering a number of Cash Prizes for the most interesting and novel Meccano pictures made by readers. The Competition is open to readers of all ages, and details of the prizes are given in the panel at the foot of this page.

Competitors may make any kind of picture they like and may use any number and type of parts in its construction. There are hundreds of subjects suitable for pictures and I can assure readers that it is great fun making them up. Those who wish to do so may increase the realism of their pictures by painting the cardboard background in suitable colours.

It should not be difficult to find a novel subject for a picture that can be made up realistically in the manner described. Good



This novel picture of a climbing bear is built up in the flat from Meccano parts. It is a good example of an entry suitable for the special Competition announced on this page and is the work of L. Doctors, Sydney, Australia.

sources of suitable subjects are sport and hobbies. An incident in a football or cricket match, an angler fishing or a dirt track rider flashing past the finishing line would make good pictures and, of course, there are many landscape and seascape scenes, which if carefully chosen, can be pictured quite realistically in the flat. Of course a lot will depend on the type of parts available to the competitor and this point should be borne in mind in deciding one's subject.

When the picture is complete make a good sketch of it, or have a photograph taken, and send this to *Meccano Picture Competition, Meccano Limited, Binns Road, Old Swan, Liverpool 13*. Write your name and address clearly on the back of the entry, adding your age.

Entries must be posted in time to reach Liverpool not later than 30th November next. All prize-winners will be notified by letter as soon as possible after the closing date of the Competition. Prize-winning entries become the property of Meccano Ltd., but unsuccessful entries will be returned if a stamped addressed envelope is sent.

THE PRIZES OFFERED IN THIS COMPETITION

	£	s.	d.
First Prize, Cheque for	5	5	0
Second Prize, Cheque for	3	3	0
Third Prize, Cheque for	2	2	0
Fifteen Prizes, each of	10	0	
Fifteen Prizes, each of	5	0	
Closing date for Entries, 30th November, 1959.			

Among the Model- Builders

By "Spanner"

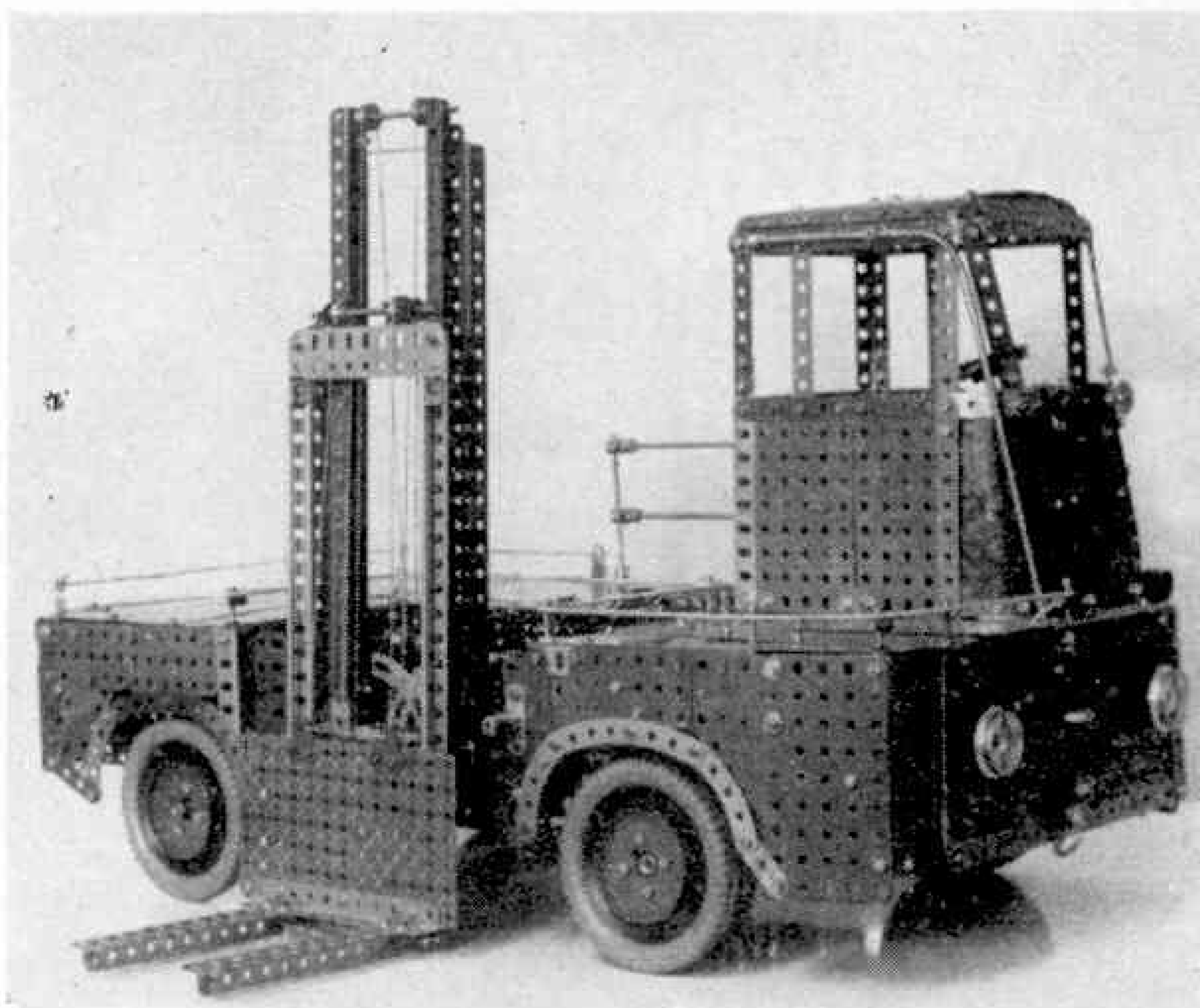
A Motorised Fork Lift Truck from Luxembourg

A correspondent in Luxembourg, Mr. Guy Kind, wrote to me recently enclosing some photographs and a few details of a very attractive model of a motorised Fork Lift Truck he had built, and which is designed for handling tree trunks, planks, steel plates and girders and similar loads. One of the photographs is reproduced on this page.

The model takes its motive power from two Electric Motors, one of which is situated at the forward end of the chassis and drives the front road wheels of the vehicle through a six-speed gear-box that gives three forward speeds and three reverse.

The second motor is placed at the rear and operates all the movements of the fork lifting apparatus. In addition to the normal raising and lowering, the forks and guide structure can be moved laterally across the chassis. The model is distinguished by its remarkably neat and finished appearance

and its excellent proportions.



The motorised fork lift truck built by Mr. Guy Kind, Luxembourg, which is referred to on this page.

Simple Expanding Brake

A simple example of an internal expanding brake suitable for use in a model car chassis is shown in Fig. 1. The brake disc consists of two Semi-Circular Plates bolted together. Two Angle Brackets 2 are pivoted freely on bolts lock-nutted in the disc. The brake shoes are two $3\frac{1}{2}$ " Strips bent to shape as shown and bolted at one end to the free lugs of the Angle Brackets. The shoes are caused to expand by means of an operating piece consisting of two $\frac{3}{8}$ " Bolts each fixed by a nut in the spider from a Swivel Bearing 3. These Bolts press against the free ends of the brake shoes. The spider carries also a $\frac{1}{2}$ " Bolt 4, and a $2\frac{1}{2}$ " Driving Band 5 is looped over the shanks of the bolts holding the $3\frac{1}{2}$ " Strips to the Angle Brackets.

A $\frac{3}{4}$ " Bolt 6 is held very loosely in the brake disc by means of two sets of nuts locked together on each side of the disc. The Bolt shank is therefore free to move or

wobble sideways. This Bolt is connected by any suitable method to the brake operating pedal of the car. If the Bolt 6 is pulled sideways its shank, pressing against the Bolt 4, forces the $\frac{3}{8}$ " Bolts in the spider against the ends of the brake shoes, so

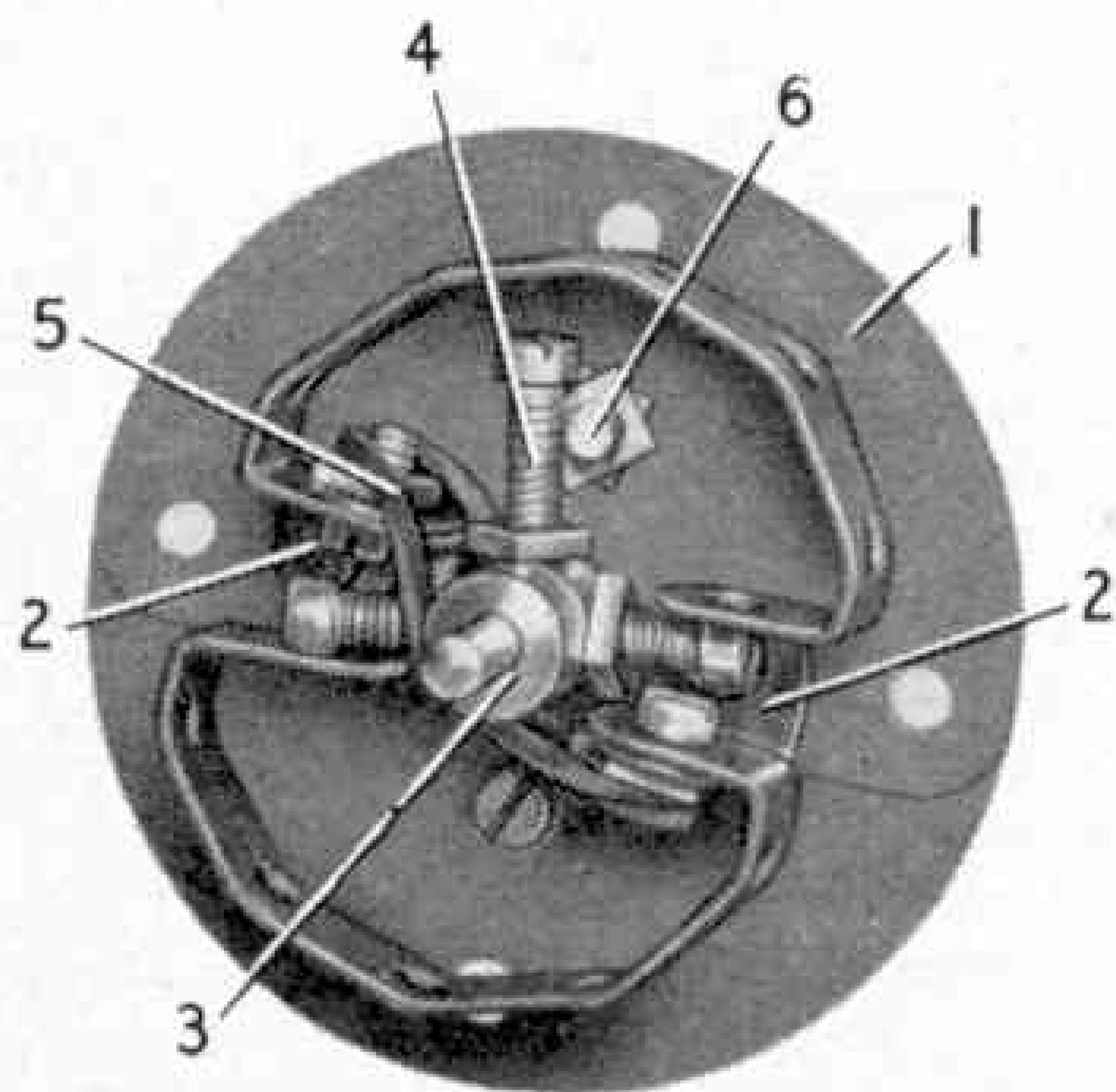
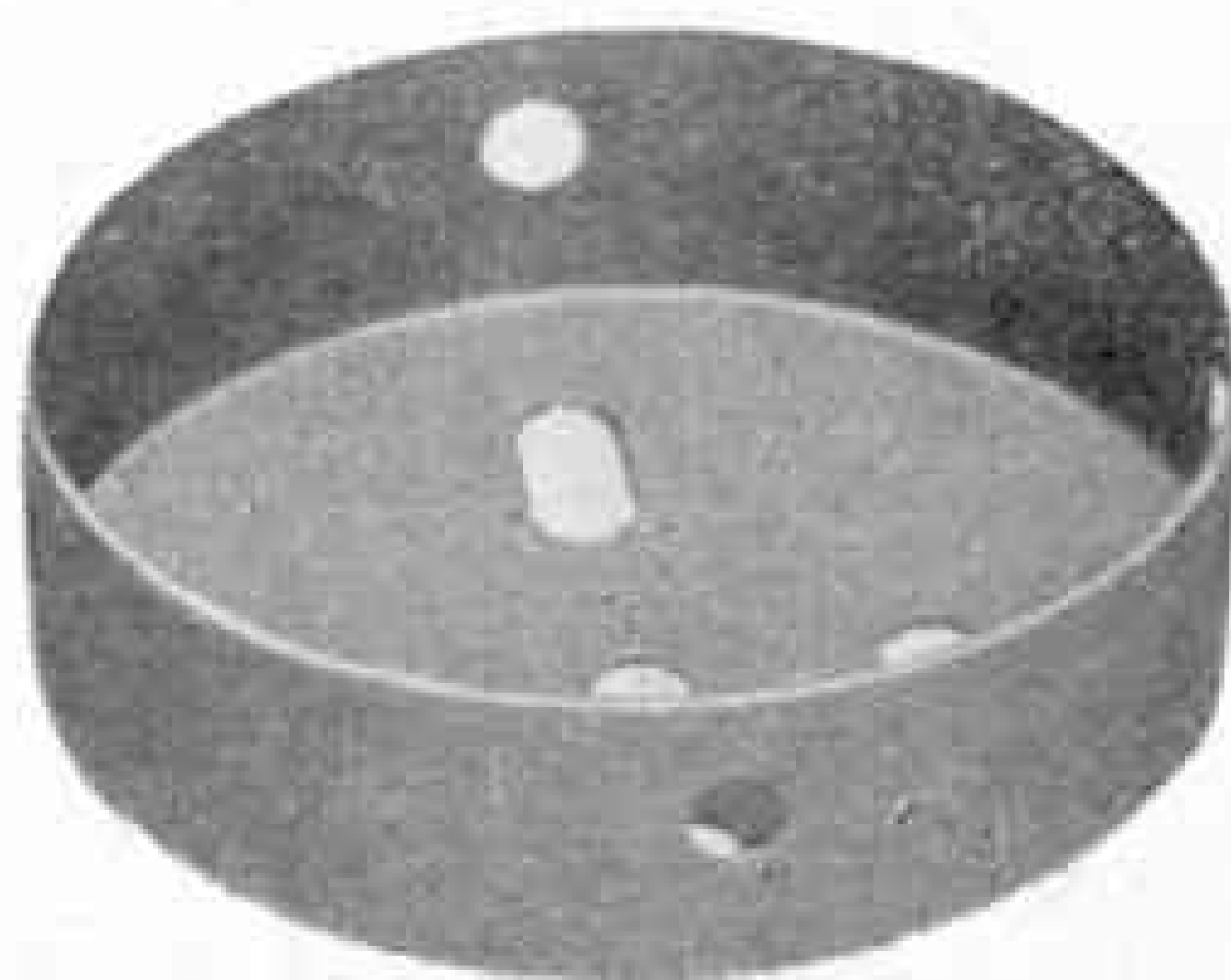


Fig. 1. A simple expanding brake for use in a car chassis.



forcing them apart to press against the brake drum. The latter is a Boiler End, and in Fig. 1 is shown detached in order to reveal the interior arrangement.

A Compact Winding Drum and Gear-Box Unit

Model crane builders will be interested in the compact gear-box and winding drum arrangement shown in Figs. 2 and 3, which is suitable for use in models of the larger and more advanced type. It contains many novel features, particularly in the form of gear-lock used, and it was designed by Mr. G. Th. van Beusekom, Oosterbeek, Holland.

It is best to commence building the mechanism by bolting two Trunnions 1 and 2, spaced away with a $1\frac{1}{2}$ " Strip, to a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate. Two Double Bent Strips 3 and 4 are attached to the underneath side of the Plate. To a $1\frac{1}{2}$ " Rod 5 a $\frac{3}{4}$ " Contrate Wheel is fixed and a similar Wheel is secured on Rod 6, but is spaced away from the Plate by means of two Washers. A $3\frac{1}{2}$ " Rod 7 is passed through the Trunnions 1 and 2 and a $\frac{1}{2}$ " Pinion 8 is fastened to it. A $\frac{3}{4}$ " Pinion 9 is attached to a 1" Gear Wheel by means of a Socket Coupling, and the unit is free on the Rod 7, but is held in place by a Collar. Three Washers are placed between the 1" Gear Wheel and the Trunnion 2. These Pinions engage with the $\frac{3}{4}$ " Contrate Wheels on the

Rods 5 and 6.

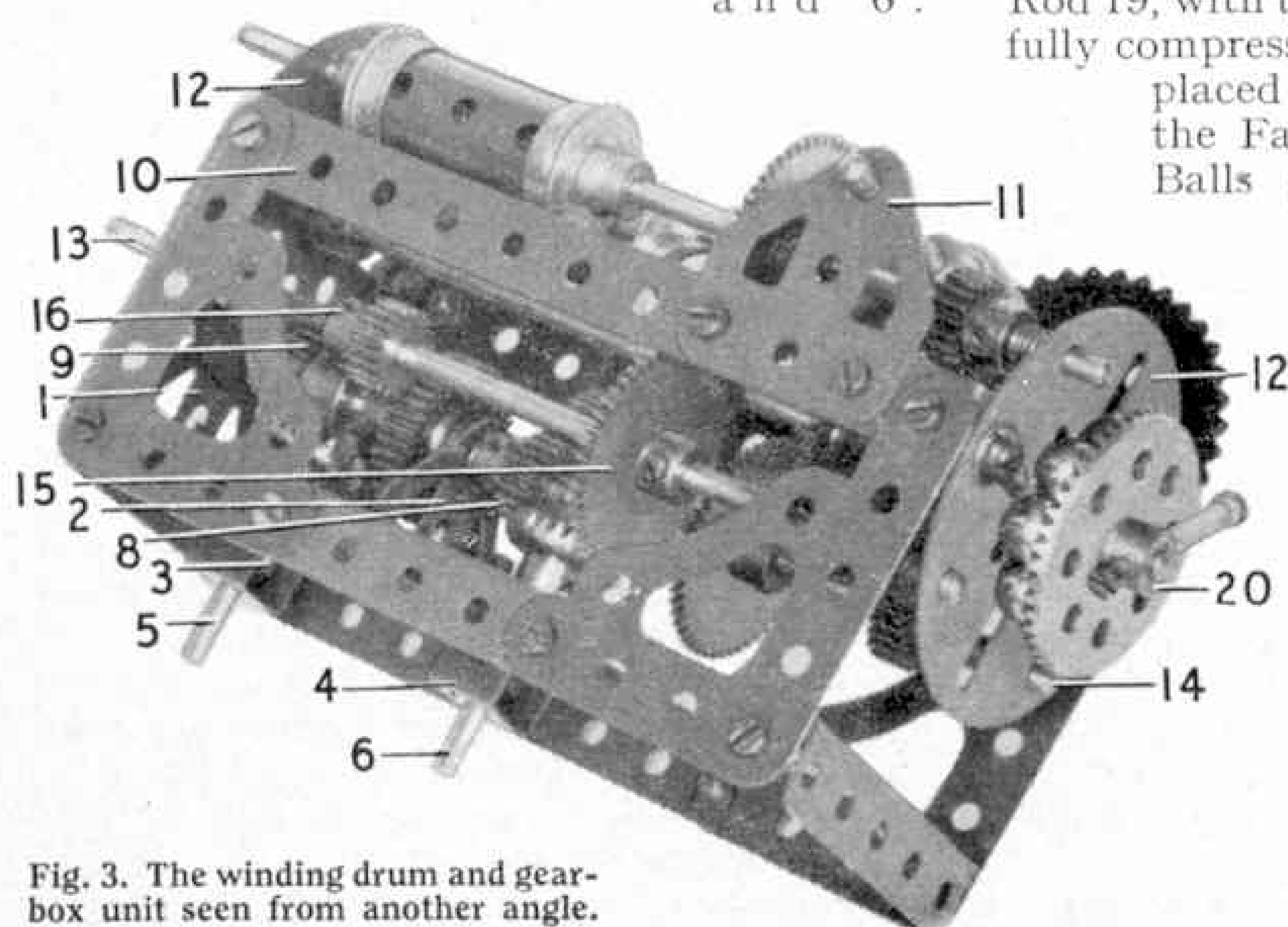


Fig. 3. The winding drum and gear-box unit seen from another angle.

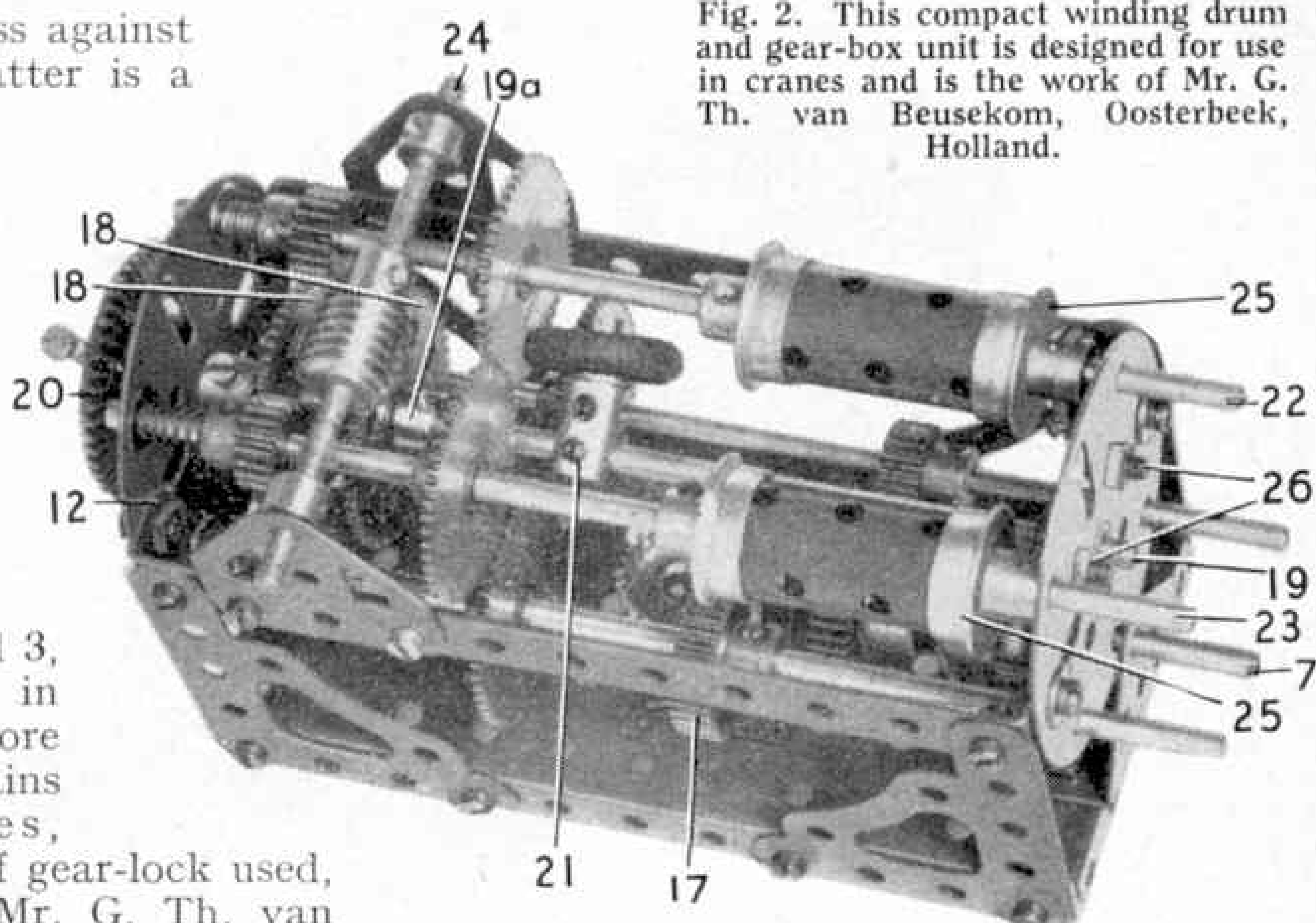


Fig. 2. This compact winding drum and gear-box unit is designed for use in cranes and is the work of Mr. G. Th. van Beusekom, Oosterbeek, Holland.

Four Corner Gussets are now bolted to the Flanged Plate and each pair is joined at the side by a $5\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip 10, which has a Flat Trunnion 11 attached to it. To the lugs of the Double Angle Strips 10 Face Plates 12 are bolted. One of the $6\frac{1}{2}$ " Rods 13 and 14 carries a Washer, a Compression Spring, a $\frac{1}{2}$ " Pinion, a 50-tooth Gear Wheel 15, another $\frac{1}{2}$ " Pinion and a Collar. The other Rod carries similar parts except that the $\frac{1}{2}$ " Pinion is replaced by a 1" Gear Wheel 17. Two 57-tooth Gear Wheels 18 are bolted apart on two $\frac{3}{4}$ " Bolts with three nuts and are free to turn on the $6\frac{1}{2}$ " Rod 19. A Washer, a Compression Spring and another Washer are placed between the boss of the Face Plate and the Gear Wheels 18. A Collar 19a is fixed to the Rod 19, with the Compression Spring almost fully compressed. A loose $\frac{1}{2}$ " Pulley is then placed on the $6\frac{1}{2}$ " Rod 19, outside the Face Plate, with eight $\frac{3}{8}$ " Steel Balls placed around it. A $1\frac{1}{2}$ "

Bevel Wheel 20 is secured to the Rod so that the Steel Balls rest in the eight holes of the Bevel Wheel and Face Plate. The Bevel Wheel can be rotated by means of a $\frac{3}{8}$ " Bolt fixed in its boss. A Short Coupling 21, carrying a $\frac{1}{2}$ " loose Pulley fitted with a Dinky Toys Tyre is fixed to the Rod 19 so that with the Steel Balls resting in the holes, the $\frac{3}{8}$ " Bolt in the

(Continued on page 472)

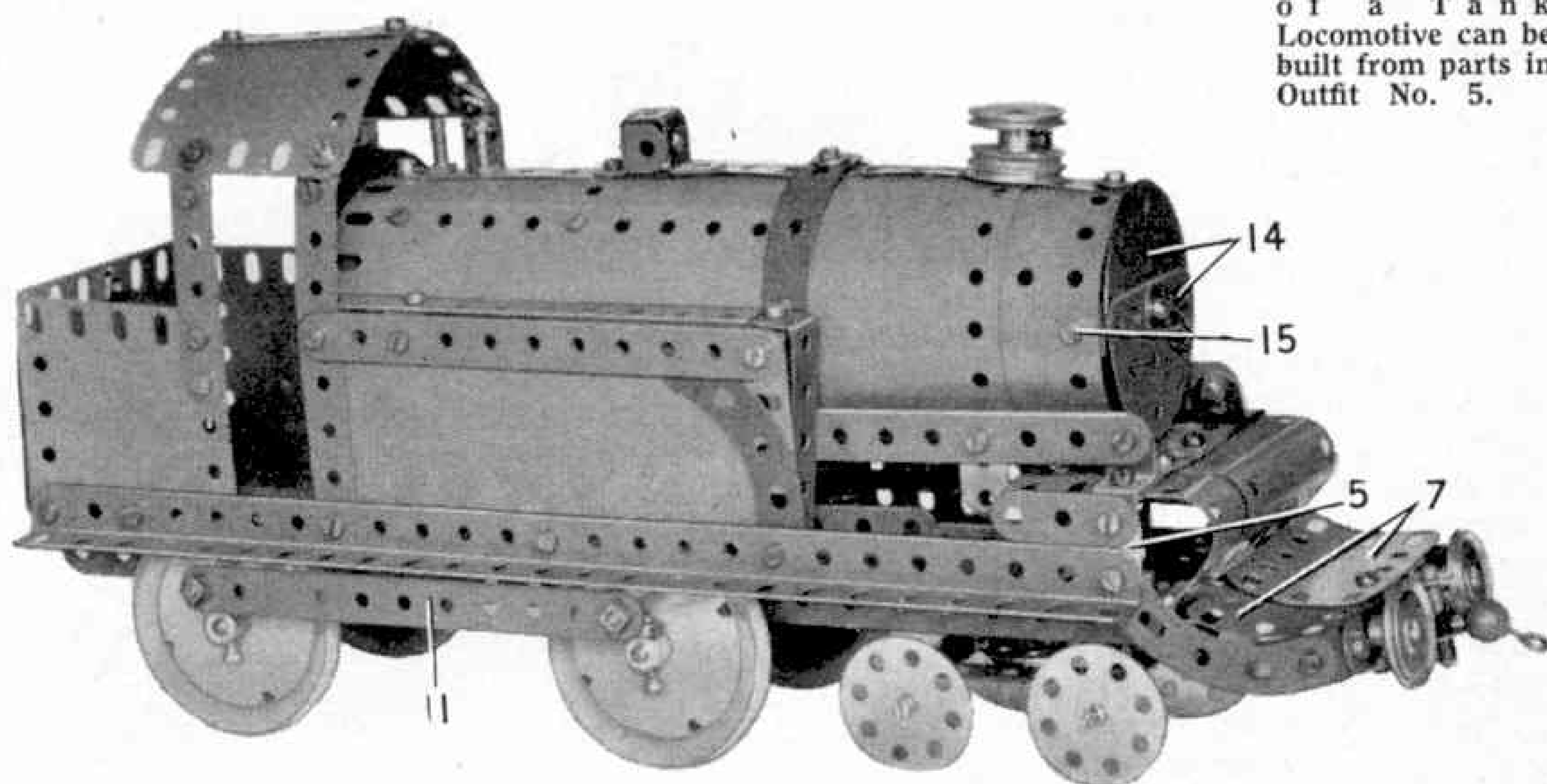


Fig. 1. This model of a Tank Locomotive can be built from parts in Outfit No. 5.

Tank Locomotive

A New Model for Outfit No. 5

CONSTRUCTION of the model Tank Locomotive shown in Fig. 1 is begun by bolting a $12\frac{1}{2}$ " Angle Girder to each of the larger flanges of a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate 1. A Flanged Sector Plate, and a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flanged Plate are then bolted to the $12\frac{1}{2}$ " Angle Girders. A $3\frac{1}{2}$ " Strip 2 is bolted across the Flanged Plate and a similar Strip is used to connect the $12\frac{1}{2}$ " Angle Girders at their forward ends. Two more $12\frac{1}{2}$ " Angle Girders 3 are attached to the $3\frac{1}{2}$ " Strips by Angle Brackets, the bolts at the front holding also a $2\frac{1}{2}$ " Curved Stepped Strip 4 and a Fishplate 5 in place, while those at the rear hold also a $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate.

The buffer beam is made from two $2\frac{1}{2}$ " Strips overlapped and is fixed by $1"$ \times $1"$ Angle Brackets to the Curved Strips 4. A Reversed Angle Bracket 6 and a $1\frac{1}{2}"$ Strip are bolted to the Fishplates 5 and a $2\frac{1}{2}"$ \times $1\frac{1}{2}"$ Flexible Plate is bolted to each Reversed Angle Bracket to provide a saddle for the tank. Two U-section Curved Plates are then bolted to the $2\frac{1}{2}"$ \times $1\frac{1}{2}"$ Flexible Plates. Two slightly curved $2\frac{1}{2}"$ \times $1\frac{1}{2}"$ Flexible Plates 7 are bolted to a Double Bracket attached to the buffer beam. A $5\frac{1}{2}"$ Strip is bolted at each side of the locomotive to the upper lug of the Reversed Angle Bracket 6.

Each of the side water tanks is made

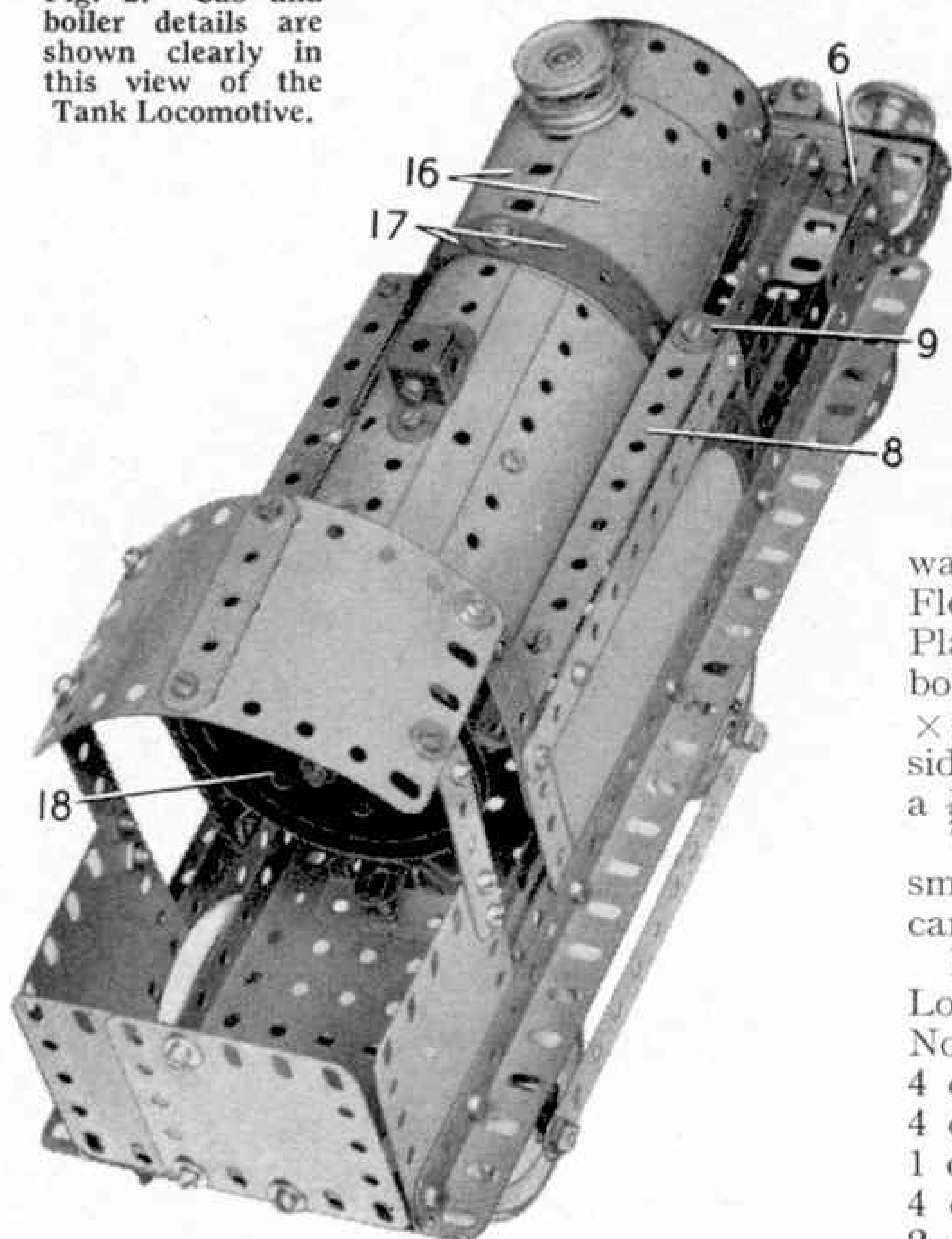
from a $5\frac{1}{2}"$ \times $2\frac{1}{2}"$ Flexible Plate edged by a $2\frac{1}{2}"$ Curved Strip and a $5\frac{1}{2}"$ Strip and two $2\frac{1}{2}"$ Strips overlapped two holes and fixed to the main $12\frac{1}{2}"$ Angle Girders 3. A $5\frac{1}{2}"$ Strip 8 is attached to the top of each tank by Angle Brackets and the front is filled in by a Double Angle Strip 9.

Each side of the coal bunker is a $2\frac{1}{2}"$ \times $2\frac{1}{2}"$ Flexible Plate to which a $2\frac{1}{2}"$ Strip 10 is bolted, and the rear consists of two $2\frac{1}{2}"$ \times $2\frac{1}{2}"$ Flexible Plates.

The cab roof is made from two $\frac{11}{16}"$ radius Curved Plates bolted together, the same bolts holding also a $2\frac{1}{2}"$ Strip on the outside as shown in Fig. 2. It is supported by Obtuse Angle Brackets fixed to the $2\frac{1}{2}"$ and $5\frac{1}{2}"$ strips. The driving wheels are Road Wheels fixed on $4"$ Rods mounted in Flat Trunnions and Fishplates bolted to the inner pair of $12\frac{1}{2}"$ Angle Girders. The Coupling Rods 11 on each side and $5\frac{1}{2}"$ Strips lock-nutted at each end to an Angle Bracket that is fixed by a nut and bolt to the boss of one of the Road Wheels. Each bolt is fitted with a nut and then passed through the slotted hole of the Angle Bracket and screwed into the boss of a Road Wheel. The nut is then tightened against the boss to fix the Angle Bracket firmly in place.

The bogie unit consists of two $2\frac{1}{2}"$ \times $\frac{1}{2}"$ Double Angle Strips and three $2\frac{1}{2}"$ Strips, the centre one of which is bolted to a Bush

Fig. 2. Cab and boiler details are shown clearly in this view of the Tank Locomotive.



Wheel 12. The Wheels are six-hole and eight-hole Wheel Discs. The complete bogie swivels on a $1\frac{1}{2}$ " Rod 13 that is held in the boss of the Bush Wheel and passes through a hole in a Reversed Angle Bracket and the $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flanged Plate at the front end of the loco chassis. A Cord Anchoring Spring keeps the $1\frac{1}{2}$ " Rod in place.

The smoke-box door of the boiler is made from two Semi-Circular Plates 14 (Fig. 1), fitted with a $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip. Two $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates are curved to fit round the Semi-Circular Plates and are fixed to the lugs of the Double Angle Strip, one of the bolts holding them to the Double Angle Strip is marked 15. The $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates are extended to the rear by two $4\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates 16 bolted together to form a cylinder. The section of the boiler above the water tank is made from two $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates and two $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates. Two Formed Slotted Strips are bolted around the boiler as shown. A $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip is fixed to the boiler sides and a 3" Pulley 18 is attached to it by a $\frac{1}{2}$ " Bolt.

The boiler is completed by adding the smoke stack and dome, details of which can be seen in the illustrations.

Parts required to build the Tank Locomotive: 10 of No. 2; 2 of No. 3; 12 of No. 5; 2 of No. 6a; 4 of No. 8; 4 of No. 10; 4 of No. 11; 11 of No. 12; 2 of No. 12a; 4 of No. 12c; 2 of No. 15b; 1 of No. 17; 1 of No. 18a; 1 of No. 18b; 1 of No. 19b; 4 of No. 22; 2 of No. 22a; 1 of No. 24; 2 of No. 24a; 2 of No. 24c; 2 of No. 35; 118 of No. 37a; 110 of No. 37b; 20 of No. 38; 1 of No. 45; 1 of No. 48; 6 of No. 48a; 1 of No. 51; 1 of No. 52; 1 of No. 54; 4 of No. 90a; 2 of No. 111a; 5 of No. 111c; 1 of No. 115; 4 of No. 125; 2 of No. 126; 2 of No. 126a; 1 of No. 147b; 1 of No. 176; 4 of No. 187; 4 of No. 188; 4 of No. 189; 4 of No. 190; 2 of No. 191; 2 of No. 192; 2 of No. 199; 2 of No. 200; 1 of No. 212; 2 of No. 214; 4 of No. 215.

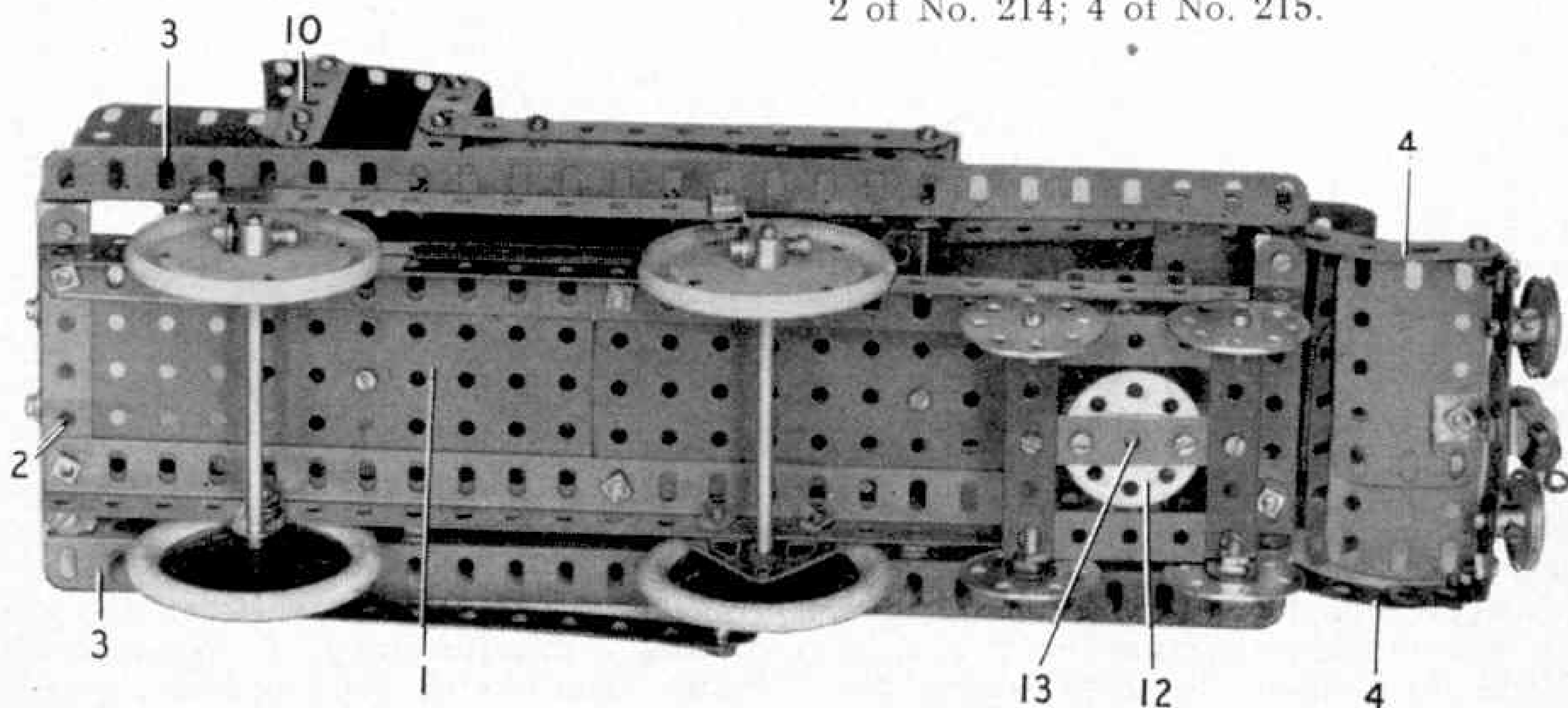
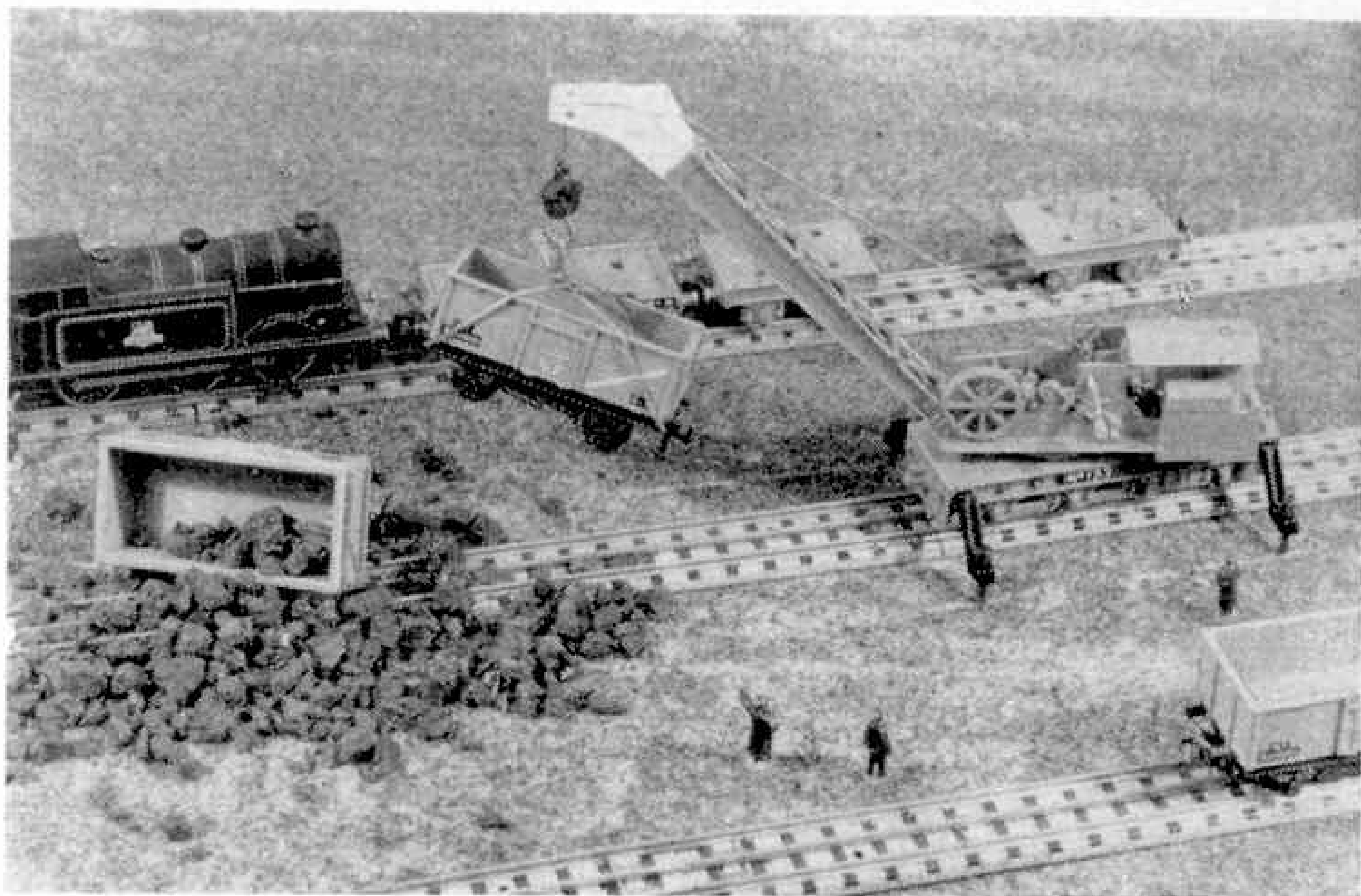


Fig. 3. An underneath view of the Tank Locomotive.

HORNBY RAILWAY COMPANY

By
the Secretary



The "Big Hook" in Hornby-Dublo

NOW I can tell you something about the Hornby-Dublo Breakdown Crane. Many readers will already have seen the Hornby-Dublo Breakdown Crane, and not a few will already have it in service on their layouts. This really fine new piece of equipment is one of the most exciting of recent additions that have been made to the Hornby-Dublo System and one that is sure to be popular with all owners of Gauge 00 railways.

For some time enthusiasts have been writing to suggest that a breakdown crane should be introduced in Hornby-Dublo, but few I think could have had any idea that when this did come about the finished job would be such a fine specimen of miniature railway engineering. Just to be able to see it on our railways would in itself be good enough, but handsome and impressive as it is, the splendid Breakdown Crane is no mere ornament. It is designed to do its job just as the real cranes do, and a great deal of careful thought and experimental work lies behind its production.

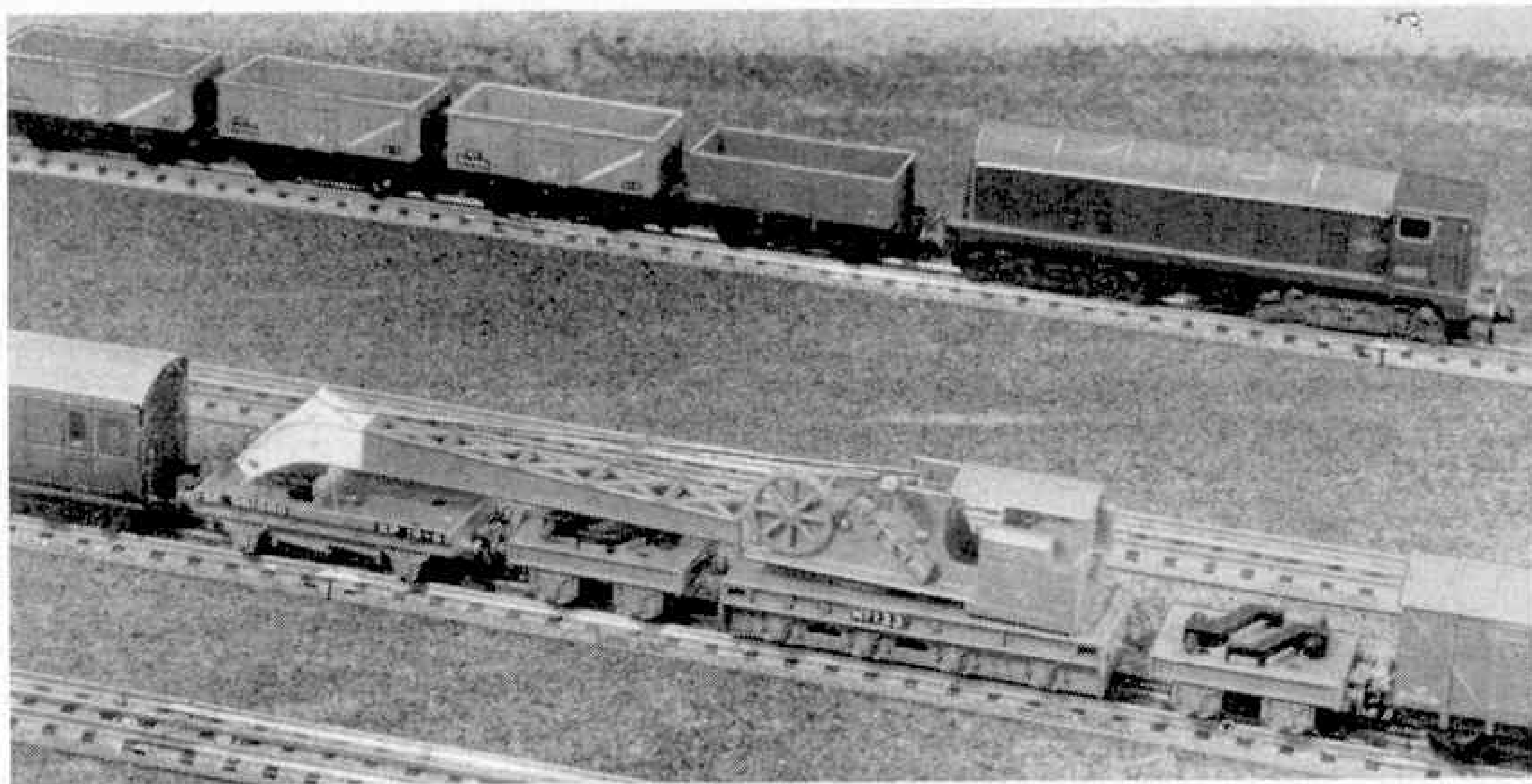
The first thing to note about the Breakdown Crane assembly is that it consists of several components, each

The Hornby-Dublo Breakdown Crane has been called to the scene of a derailment. The crane carriage is correctly supported by the screw jacks to give stability as a Mineral Wagon is being lifted. The Match Truck and Relieving Bogies have been moved to an adjacent track to allow the crane to approach as closely as possible to the derailed vehicles.

devoted to a special task. The crane itself and the crane carriage, on which it is mounted, form the largest and most spectacular part of the whole outfit. At both ends of this are what are known as Relieving Bogies, representing the small vehicles that in actual practice are coupled to the crane carriage in a special manner so that the weight of the heavy crane is distributed over the track. In addition,

there is a Match Truck carrying the trestle shaped support on which the jib of the crane rests when not in use, and lastly there are the jacks, about which I will have more to say later.

The crane itself—the *Big Hook* to American railroad men—represents the familiar railway type of steam-driven crane, with jib, winding drums and gearing, steam cylinders, "cab" and boiler arranged as a unit that can be turned or swivelled round on the crane carriage on which it is mounted. Needless to say, this part of the crane is thoroughly well detailed, the jib forming a massive girder of characteristic shape. The winding gear for hoisting and derricking is necessarily simplified for practical purposes, because the crane has



The Breakdown Crane assembly is here made ready for travelling, with the crane jib resting on the Match Truck and the screw jacks carried on the Relieving Bogies.

to be worked by the very much out-of-scale fingers of miniature railway operators. But the construction of the crane unit is remarkably neat and details such as cylinders, circular cranks, gear wheels and crane motion generally are well represented.

At the rear the vertical boiler even incorporates a representation of the manhole invariably found on such boilers. Then there are the balance weights, water tanks, coal bunker and so on, disposed behind the operating platform or "cab" in which the crane driver on a real crane is accommodated. The chimney projects through the cab roof, and the hinged section that is swung over to extend it when the crane is at a job also is represented. On the real thing this hangs down out of use when the crane is travelling because of loading gauge restrictions and it is shown in this position on the model.

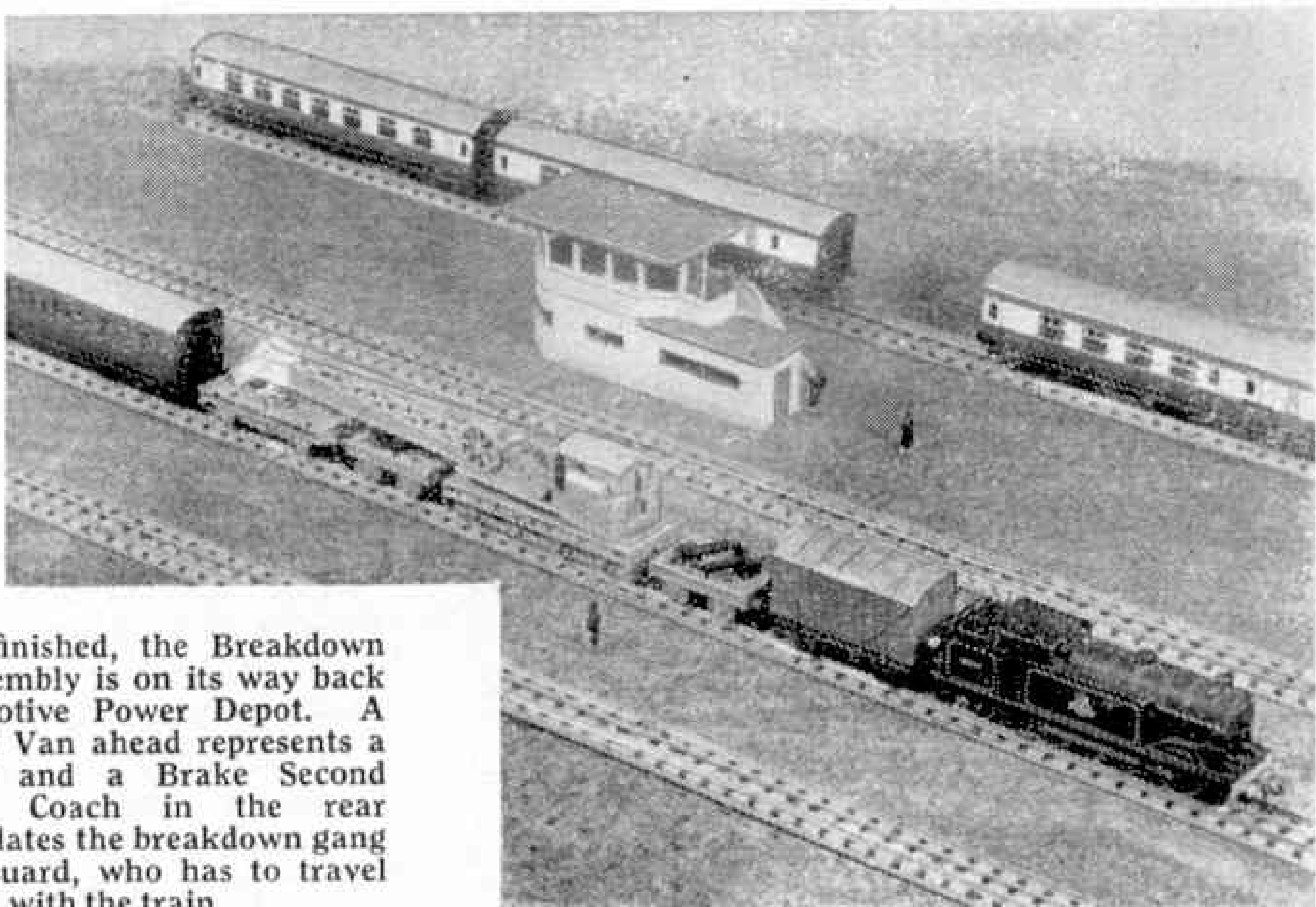
The crane carriage, and the Relieving Bogies, have been modelled to represent the massive construction characteristic of the real thing, which in this instance is a breakdown

crane built by Cowans, Sheldon and Co. Ltd., of Carlisle, now in service on the Eastern Region of British Railways.

The crane can be swivelled round to any angle. It has two control handles. One is for derricking, that is raising or lowering the jib, and the other for hoisting or lowering the crane hook and its load.

The Relieving Bogies, simple as they are in the model, are well detailed and they are attached to the crane carriage by means of a simple type of link-and-pin coupling. On each there are two specially-shaped screw jacks, the purpose of which is to give a firm base when the crane is used, just as outriggers do on the real thing.

(Continued on page 472)

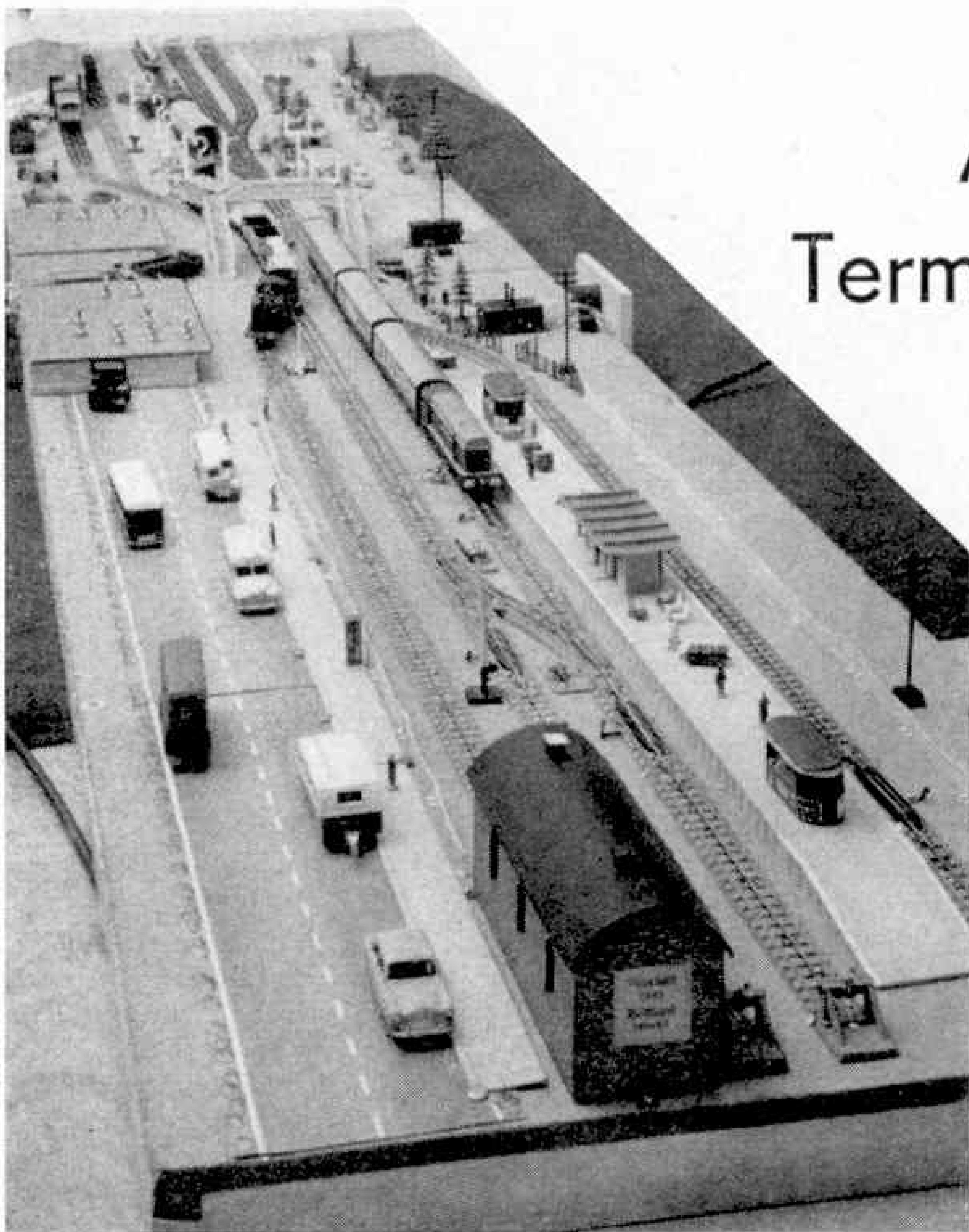


The job finished, the Breakdown Crane assembly is on its way back to the Motive Power Depot. A Ventilated Van ahead represents a tool van and a Brake Second Suburban Coach in the rear accommodates the breakdown gang and the guard, who has to travel with the train.

A Useful Terminus Scheme

By

"Layout Man"



An end-on view of the Hornby-Dublo layout of the Wilman family, with the station and an engine shed clearly visible.

THERE has already been a splendid response to my invitation to readers to forward details and photographs of their Hornby-Dublo railways. It is always exciting, and usually very helpful, to read how other enthusiasts arrange and manage their lines, so don't forget, the more the merrier!

The railway shown above—part of the trackwork is seen in the diagram at the top of the opposite page—is unusual in being a relatively short end-to-end system, a type of layout well worth considering if a suitable space is available. It is run by the Wilman family, of Hereford, Roger Wilman sharing in the various activities with his sisters Patricia and Audrey. There is plenty of Hornby-Dublo experience embodied in the present system because a Wilman family railway has been in existence several years, during which many different schemes have been tried. The present layout consists of a

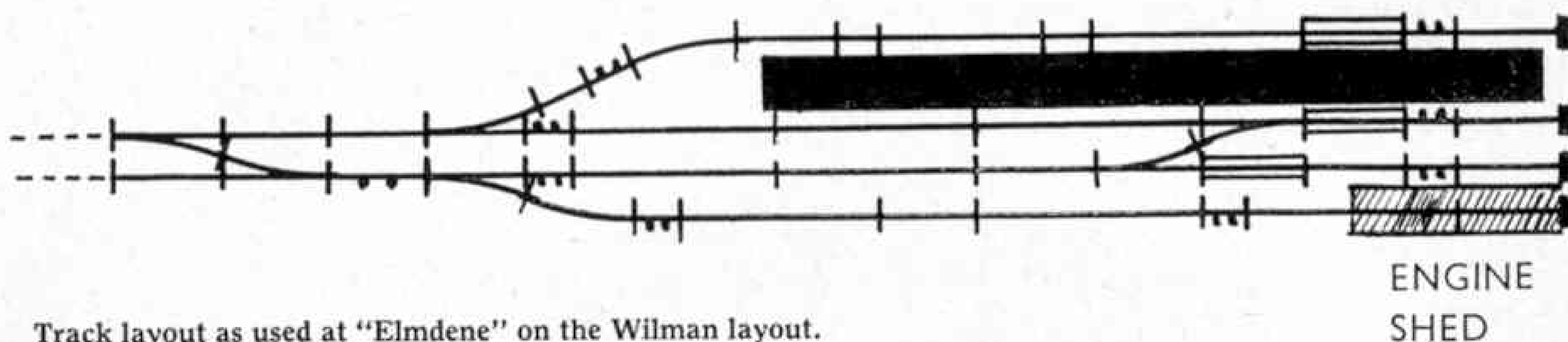
small terminal station with a short length of main line and associated sidings, and it has provided many happy hours.

Such a layout must be designed and constructed to provide for train and engine movements of the kind we can all see at terminal stations. This has been done well at *Elmdene* and I have prepared the diagram of the terminal there because it may be useful to others planning stations of this kind.

To get the best out of such a layout the Wilman plan of arranging the despatch and arrival of trains to timetables should be followed.

Let us take as a typical manoeuvre the making up of a train, and its shunting into a departure platform. Then follows the detachment of the shunting locomotive, and the backing on to the coaches of the main line engine, followed by the departure according to the timetable. After the train leaves the station it makes its way to the so-called "Magazine Sidings" at the other end of the layout. Later in the operating sequence this same train, with another locomotive, comes back into the station as an arrival, again according to the timetable. The engine still remaining in the "Magazine Sidings" can then make its way to the locomotive sheds as a separate operation.

For this and similar operations many Points have to be available in the layout, with various sectionalising arrangements, and good use has to be made of what we generally term Buffer Stop sections. With these an engine that has brought in a train can readily be uncoupled and held at the inner end of the platform, while another

ELMDENE STATION

Track layout as used at "Elmdene" on the Wilman layout.

one is attached at the other end of the train to take it away.

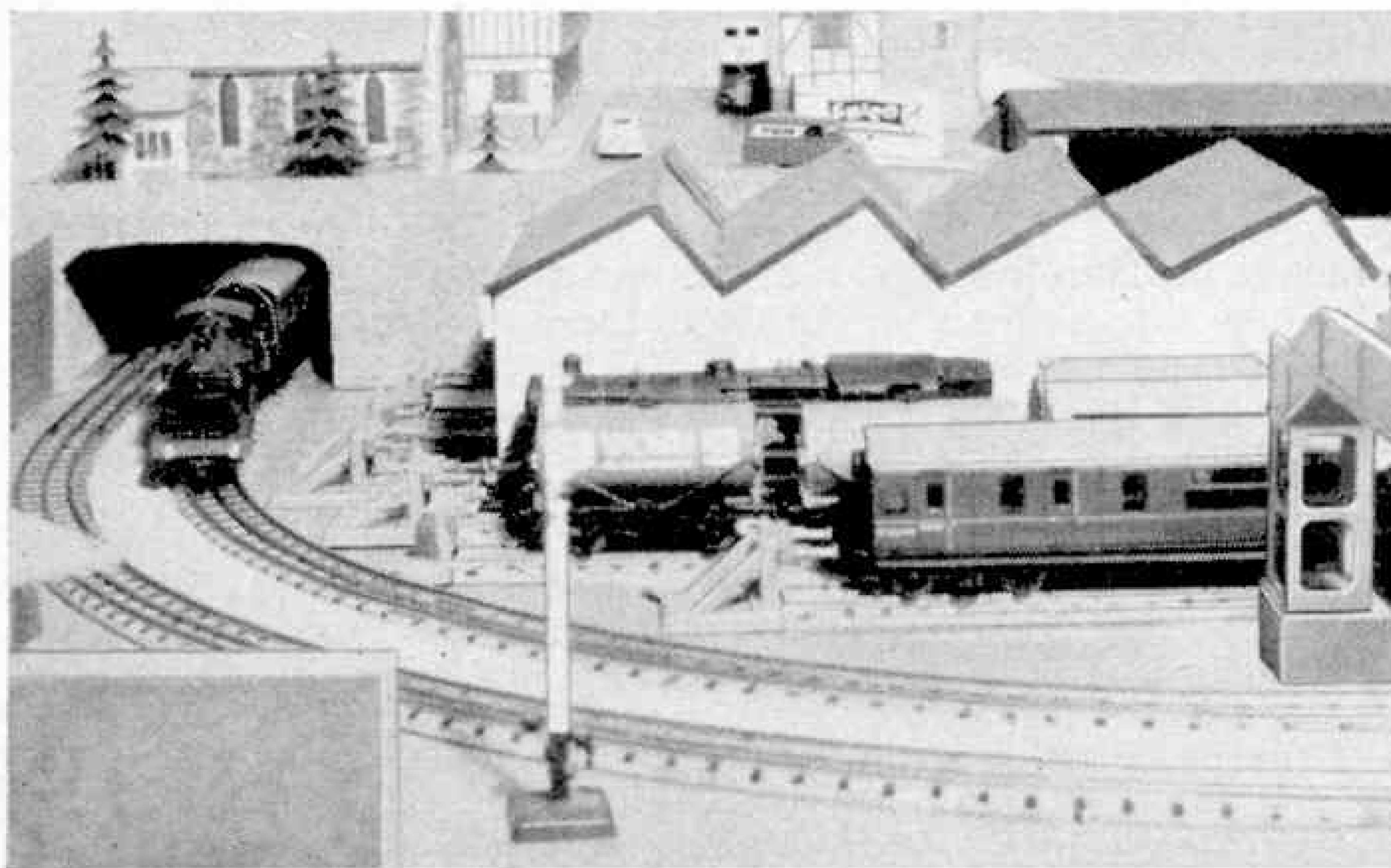
Now for a closer look at some of the interesting details of the railway. The station has a long island platform. One face of this, the upper one in the diagram, constitutes Platform 1 but the other is divided into platforms 2 and 3. Carriage and engine sidings are provided alongside, and the goods depot and yard are at the opposite end of the board. Three sidings at this end are those making up the "Magazine" already mentioned. Later this will be covered and scenic features introduced above it. The crossover from the carriage siding into Platform 3 provides a most interesting working as departures and arrivals at Platform 3 at the Buffer Stop end, can occur even when another departure is waiting in Platform 2. Quite exciting, this, and the kind of thing that could happen at many large terminal stations in real life, Victoria (London) for instance.

The electrical system is extensive, but only one Controller is involved. This is because all individual lengths of track have been divided into two or more sections,

and each full length in particular has an individual switched section at the end adjacent to the Buffer Stop, as already described. The Switches are mounted on a simple board in the same layout as the actual track and with the assistance of coloured identification spots no difficulty is experienced even by the youngest member of the family when operating this system.

Reference to the baseboard reminds me that one requirement has been that the system should be movable, so that the line is divided into two main sections 6 ft. long by 2 ft. wide. The two sections are easily moved from room to room as required and can readily be shifted for storage when the railway is not in use. The coupling arrangements between the two sections of baseboard are simple but effective. One section has two dowel pins projecting from it, each 6 in long by 1 in. wide, and these register in corresponding holes on the opposite half of the board. Long coach bolts with wing nuts also pass through the end members of the base sections and secure the boards together. Only two tracks cross the actual joint; and Quarter

Rails are used at this point. The method of assembling is to place the boards on the floor on their sides, bring them together and engage the dowels in their two holes. At this stage the two coach bolts have also entered the corresponding



A train emerges from the covered way under the township at one end of the Hornby-Dublo layout of Mr. G. A. Rogers, of Bilbrook.

Stewart L. Mawer, on the right, and Peter Pallister, both of Hull, have a fine time with their extensive Hornby-Dublo railway.



holes in the other section, and wing nuts and washers are placed on. While one person is holding the two Quarter Rails on the other side, the two wing nuts are gradually screwed to bring the two sections together. The two Quarter Rails are carefully lined up with the remainder of the track so that the connecting clips and fishplates engage as the two boards come together.

When the sidings at the opposite end of the railway from the terminal station have been covered in the operations will give the impression that trains departing into it are off on a long journey. Their reappearance later in charge of another engine will add to the effect very nicely by providing for the excitement that other trains arriving usually arouse, and the effect of repeated departures and arrivals will be absolutely splendid.

Exactly what form the tunnel will take is not known at present, but perhaps some type of covered way rather than an actual tunnel will be the answer. A structure of this kind is very effectively arranged in the layout shown in the lower illustration on page 463 showing one end of the system of Mr. G. A. Rogers and his son, of Bilbrook, near Wolverhampton. As frequently happens nowadays on Hornby-Dublo layouts, the built-up section above the covered way on this railway carries miniature buildings that constitute an effective town, while disguising the fact that the trains on this railway run on a continuous layout. The wish to run main line expresses determined this particular build-up of the layout. It has two main line stations, each of sufficient length to accommodate a four-coach train. There are sidings at each station for the passenger trains when not in use and there is also some accommodation for goods vehicles.

Although all the points on this 6 ft 9 in. × 4 ft. system are hand operated, these are so placed that the whole railway can be worked from one control site.

A special feature has been to ensure that the layout can be dismantled for cleaning purposes, as is very necessary from time to time on any system. Actually Mr. Rogers tells me that the board can be completely cleared within 20 minutes, while it only takes half-an-hour to re-assemble the various lineside buildings, etc., all of which are screwed to the baseboard.

Our final picture this month shows another jointly operated railway arranged by the two enthusiasts whom you see with their layout. They are Stewart L. Mawer, and his friend Peter Pallister, of Hull. Their happy expressions are obviously a sign of the fun they enjoy with this fine system. The layout is a continuous one, well laid out for traffic working and you will notice how conveniently the Turntable has been arranged to serve the off-going tracks that radiate from it in the lower half of the illustration.

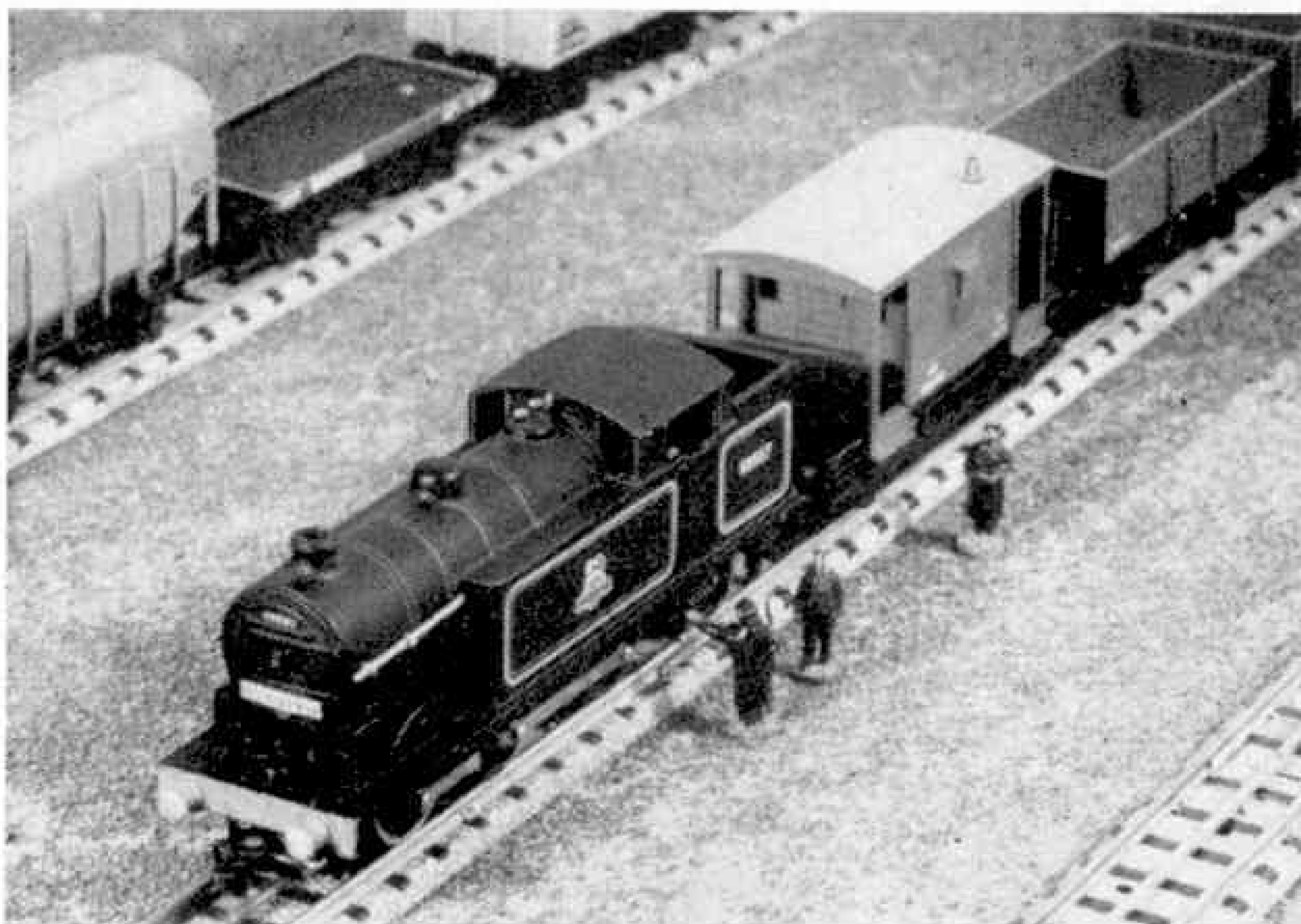
Although there is plenty of railway, and scenic effects as such are not provided, such roadside effects as there are add a very pleasing touch to the centre of the system. There is not, as sometimes happens, a sort of Dinky Toys traffic jam on the roadway that serves the stations and the other buildings. Instead there is a realistic scene that adds just the right touch to the middle of the layout board.

No doubt there will be further developments to record later. Matters never stand still for long on any Hornby-Dublo railway.

"On Special Duties"

WHEN sending the photograph reproduced below, our contributor, J.A. Fleming, remarked that it might be interesting to work this up in Hornby-Dublo. One reason for this is that the real engine shown is an 0-6-2 of the N2 class, which the Hornby-Dublo 0-6-2 so closely resembles. The other is the position of the headboard, which is upside down!

Now this was not a mistake. The fact is that the train shown is a ballast train running through to the point required in conjunction with engineering operations. Evidence of this special duty is given by the inversion of the small destination board, reading *Hertford* in this instance, that is invariably displayed on the smoke-box front. This, we understand from our friend, is quite a usual practice on the Great

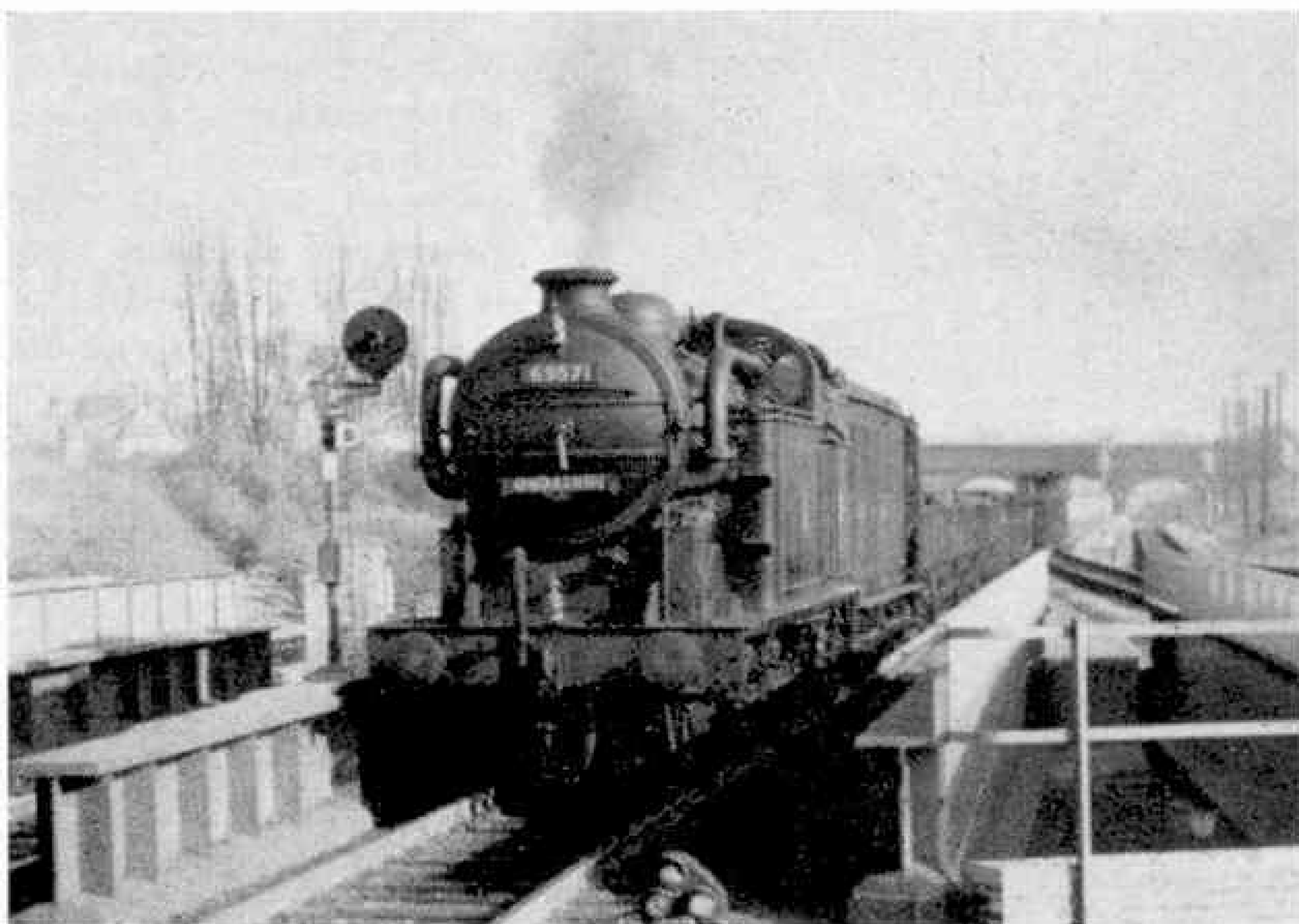


A Hornby-Dublo train representing a ballast special of the kind shown in the picture below.

Northern Line, as this section of the Eastern Region is now called.

Well, let us see what can be done in this direction in Hornby-Dublo. In the picture above there is one of the familiar 0-6-2 Tanks, which has a destination "board" mounted wrong way up. You will have to make this kind of board yourself by cutting an appropriate station name out of a timetable or something similar. This can be mounted on thin card and stuck to the smoke-box door. Don't forget to put it upside down! If you are handy with pen or brush you can fix up the board to show any name you choose, to suit your own railway.

For carrying ballast B.R. nowadays use a stout-looking 20-ton vehicle rejoicing in the code name *Grampus*. There are no such ballast wagons in Hornby-Dublo, so the nearest substitute has been used to make up the miniature ballast train in the illustration. This is the familiar Steel Type Goods Wagon of the SD6 series. Another B.R. ballast wagon is the 13-ton low-sided wooden bodied *Sole*, and to represent this the Hornby-Dublo Low-Sided Wagon could be used.



No. 69571, an E.R. 0-6-2 tank on a ballast train at Potters Bar. The destination board is upside down, as explained in this article. Photograph by J. A. Fleming.

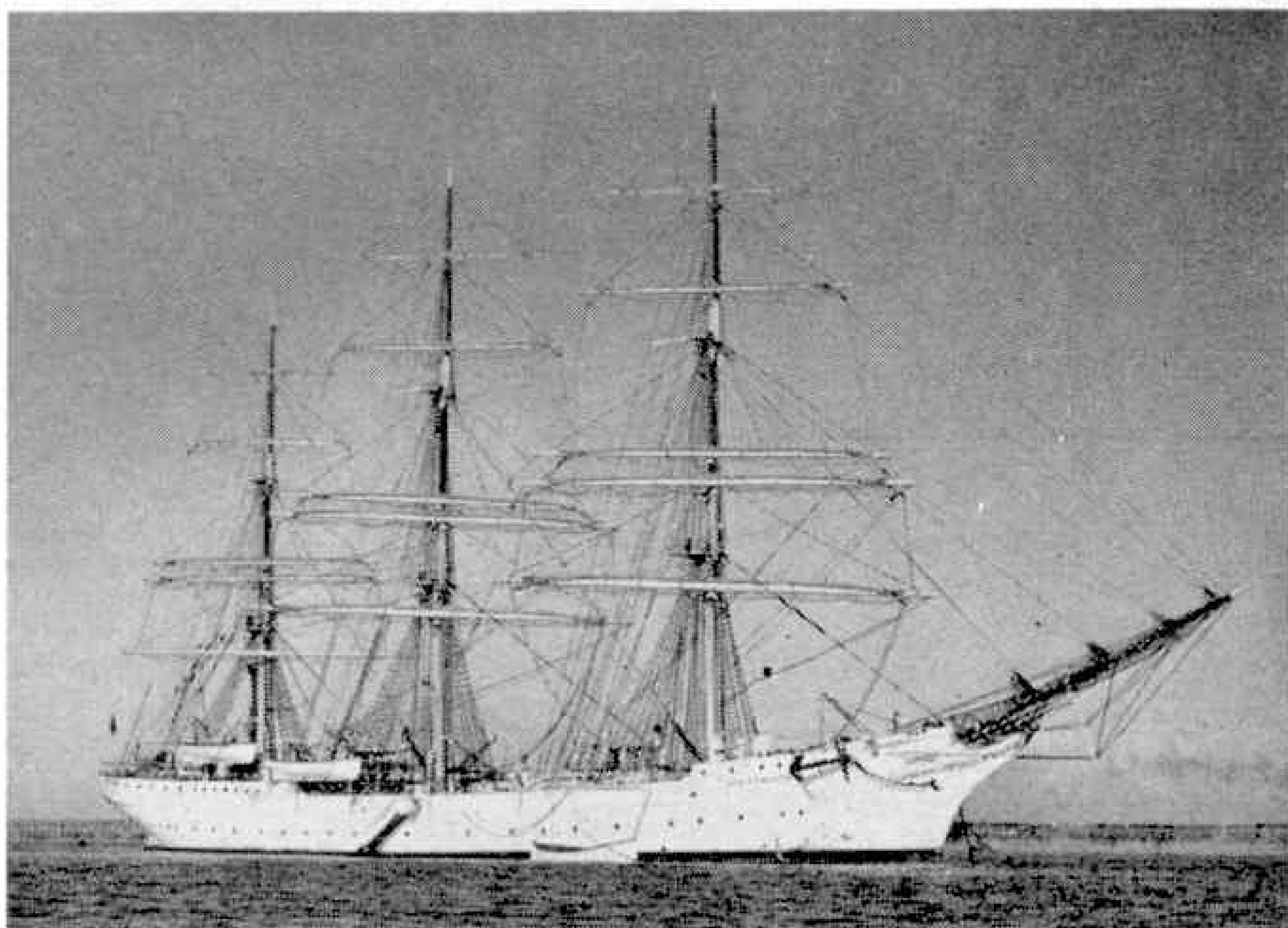
From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

A Fine Rigging Study

THE Polish square-rigged vessel *Dar Pormoza*, is a training ship for young Polish seamen, and is one of the numerous fleet of similar vessels belonging to countries that still favour a training in sail for their young Naval or Merchant Officer cadets. In the fine photograph on the right she is pictured lying in Dover harbour while on her way home to Gdynia, after a voyage to the Mediterranean.

J. MANNERING
(Dover).



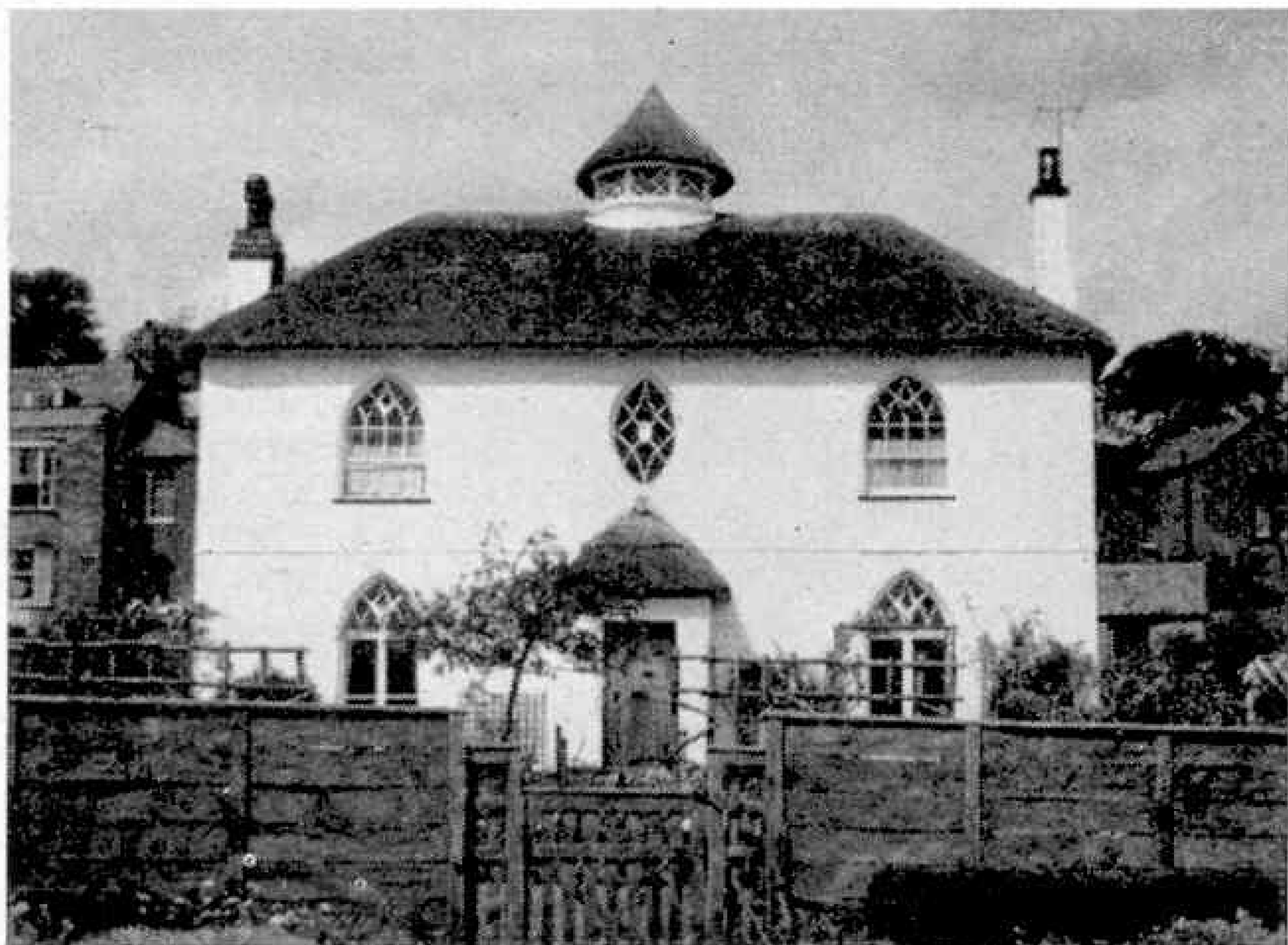
Many countries still train naval and merchant navy cadets in sail, and here is "Dar Pormoza", a Polish sailing vessel used for this purpose. Our photograph was taken by J. Mannering when the ship called at Dover.

An Unusual Lighthouse

In the little seaside town of Budleigh

Salterton in East Devon, there is an interesting old thatched villa that is included by the Ministry of Local Government and Planning in their list of buildings worthy of preservation because of its historic and architectural interest. Its name is *Fairlynch*, and it was built by Admiral Creedy who was responsible for the very unusual feature of the building—his own private lighthouse in the roof, which must surely be unique.

C. E. WRAYFORD
(Bovey Tracey).



House with a lighthouse in the attic. Photograph by C. E. Wrayford, Bovey Tracey.



Club and Branch News



WITH THE SECRETARY

The Club and Branch reports summarised here this month indicate the world-wide popularity of the Guild and the Hornby Railway Company. They include reports from South Africa, Nigeria, India, Australia and New Zealand. Although mostly thousands of miles apart, these Clubs and Branches are united in their enthusiasm for Meccano model-building and Hornby and Hornby-Dublo train operations, and over the years I have noted with great pleasure the steady progress of these distant outposts of the Guild and H.R.C. Their regular correspondence with Headquarters links them with the many Clubs and Branches in the United Kingdom, and helps to make us all one great brotherhood.

FORTHCOMING EXHIBITION

The Model Railway Club of the Audenshaw Hawthorns School, Audenshaw, nr. Manchester, will hold their second Annual Exhibition at the school this month. It will be open from 6 p.m. to 10 p.m. on Thursday and Friday, 8th and 9th October, and from 2 p.m. until 9 p.m. on Saturday, 10th October. Prices of admission: Adults 9d., Children 6d. How to get there: Bus routes Nos. 217 or 219 to Stamford Road, Audenshaw, or Bus route No. 21 to Corporation Road, Audenshaw.

CLUB NOTES

NORTH END (PORTSMOUTH) M.C.—Plans are well in hand for the Exhibition. Additional activities to be introduced in the Autumn are a Stamp Collecting Section—meeting on Tuesday evenings—and a Ships Section, meeting on Fridays. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

ASSTEAD FREE CHURCH M.C.—Outdoor activities during the Summer have included cricket and other games, and visits to the local telephone exchange, Epsom Fire Station and the B.R. Redhill Motive Power Depot. *Secretary:* C. A. Price, 32 St. Stephen's Avenue, Ashted, Surrey.

BORDEN GRAMMAR SCHOOL (SITTINGBOURNE) M.C.—The Parents' Day was a great success. It included the first "00" gauge display featuring a complete main line of the Club's own track. *Secretary:* B. Sedge, 19 Cavour Road, Sheerness, Kent.

AUSTRALIA

MAYLANDS M.C.—Several excellent cycling runs have taken place. A wide range of Meccano models has been built at indoor meetings, including the printing machine described in the October 1955 *M.M.* The Club have had more news of the unaffiliated Club at Bunby, 100 miles away. *Secretary:* T. Down, 31 Drummond Street, Bedford Park, Western Australia.

INDIA

MYSORE M.C.—Model-building has continued enthusiastically. At a *Bridges* meeting members built models of famous examples such as the Sydney Harbour and Howrah bridges. Several members have been on a tour of Madras, about 308 miles from Mysore. *Secretary:* Sri. M. N. Radhakrishna, 16 Mothikhana Building, Santhepet, Mysore 1, India.

NEW ZEALAND

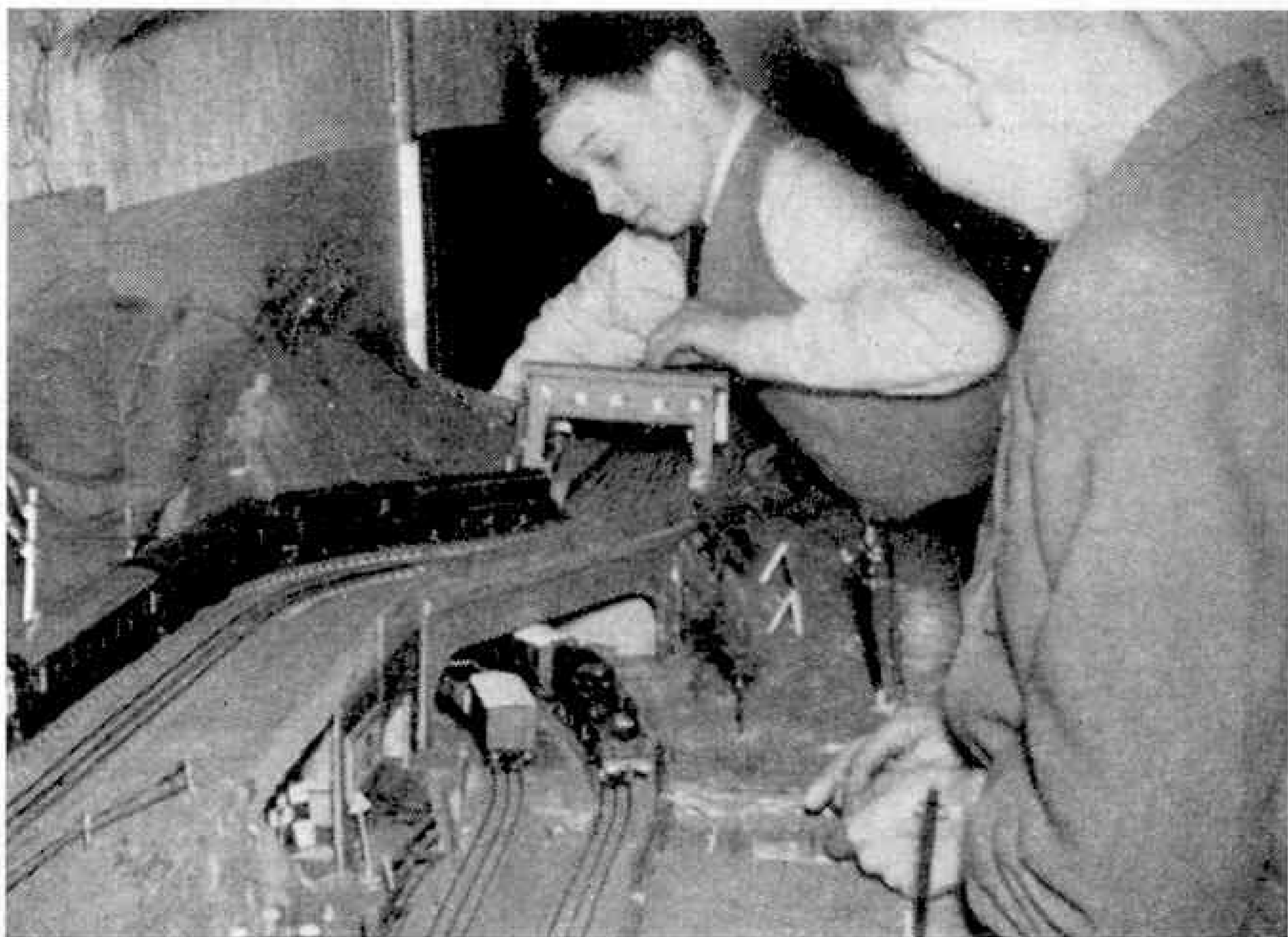
CHRISTCHURCH M.C.—Model-building continues to be the main activity, with games as a diversion. At the time of writing members are preparing models for the Club's annual display at the Christchurch South Intermediate School Fair in October. *Secretary:* Mr. C. E. Saunders, 6 Walsall Street, Riccarton, S.W.1, Christchurch, New Zealand.

SOUTH AFRICA

CAPE PENINSULA M.C.—The Annual Winter Competition was held on 11th July, and a high standard of model-building was evident. The subjects were *In the Air* and *Railways*, and T. Venn won first prize with a fine model locomotive and tender. *Secretary:* M. Sprenger, "Wenlock Edge", Princess Avenue, Newlands, Cape Town, South Africa.

BRANCH NEWS

KIDDERMINSTER.—The summer programme included a trip to the Tallylyn Railway during the holiday season. Indoors, some members have continued laying down track on the new Branch layout, while other members have been busy constructing stations, buildings, etc. *Secretary:* E. J. Ward, 27 Whittall Drive, Kidderminster.



A corner of the fine two-level layout of the Aviary Model Railway Club (H.R.C. Branch No. 547) of Leeds. This interesting photograph was taken by one of the members.

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Stamp Collectors' Corner

By F. E. Metcalfe

KNOW HOW

A month or two ago a young Midland collector told me that he had received a 2½d. stamp with two black lines on the back, the meaning of which he did not know. What did they mean, he asked, and, of course, his letter finished up with the inevitable question—Is the stamp valuable?

Well, the stamp is *not* valuable, and I was indeed

surprised that there was still anyone left who did not know about those black lines, for it is not so long since I referred to them. They are graphite lines—two on all stamps to 4d. except the 2d., which only has one—placed there because the stamps are used in connection with an electronic machine that helps them to sort themselves.

As I write one of these machines is being erected in Norwich, and there is one already in

Southampton. It is only in these districts that such stamps are being sold up to the present for obvious reasons.

I have just recapitulated briefly for the few, like my correspondent, who did not know. But all this set off a train of thought. I am afraid that those of us who have been connected with stamps and the hobby for some years are inclined to be a bit too casual. For instance, when we talk about retouches, re-entries, etc., we take it for granted that all who may read what we write or say know exactly what we are talking about. So I thought that this month I would present a little philatelic glossary for the benefit of those who have not progressed very far in the hobby.

One question often asked by those who know nothing of stamp values is whether mint or used stamps are the more valuable. The answer is that it all depends on the stamp. I know some mint stamps that are worth a hundred used, and vice versa. A stamp catalogue gives the information required to those who do not know from experience.

Again, people who come across stamps that are not listed often think they have found something very good. I am afraid that they are invariably wrong, for it is safe to say that the catalogues contain all postage stamps that are accepted as such, and any not in these lists are not accepted by collectors and not likely to be of much, or even any, value.

Then there is the question of changelings. These often



cause a lot of trouble. For instance, I have been shown many copies of our own current 2½d. stamps that were dull brown instead of bright red. Such

stamps have no value, for the change is due to their having been in contact perhaps with leather, maybe in a pocket book, and not to conditions or circumstances in printing that produce shades.

This, of course, brings me to shades, which are very popular with many collectors. We'll suppose that a stamp is first issued in a bright blue. Then there is a new printing, and the stamps are now of a different shade of blue. So we get a shade variety. That is all very well, you may say, but colours can be easily changed. True enough, but shade varieties are not accepted by collectors unless the particular printing to which they belong is known, and it is certain also that stamps of that printing did appear *thus* from the printers.

When I compiled the Commonwealth Catalogue, a number of shade varieties were included. In each case the date when the actual shade appeared is quoted. So there is no chance of changelings being given catalogue status.

Another term used often in connection with our own modern British stamps has to do with cylinder numbers. These are to be found on the left side margin, three

stamps up from the bottom. Specialists like to collect blocks of six—three rows of two stamps each—that show these numbers, and they can be very useful.

I should explain, before I go any further, that stamps printed from the right half

of the cylinder have a small dot after the figure, and there is no dot on the left half. This is an important point, for quite a lot of flaws are to be found on our current stamps, which is usual with photogravure printing, and when the position on a sheet of a flaw is being quoted, the line and the number of the stamp on that line are stated. The cylinder number, dot or no dot, as the case may be, also is mentioned.

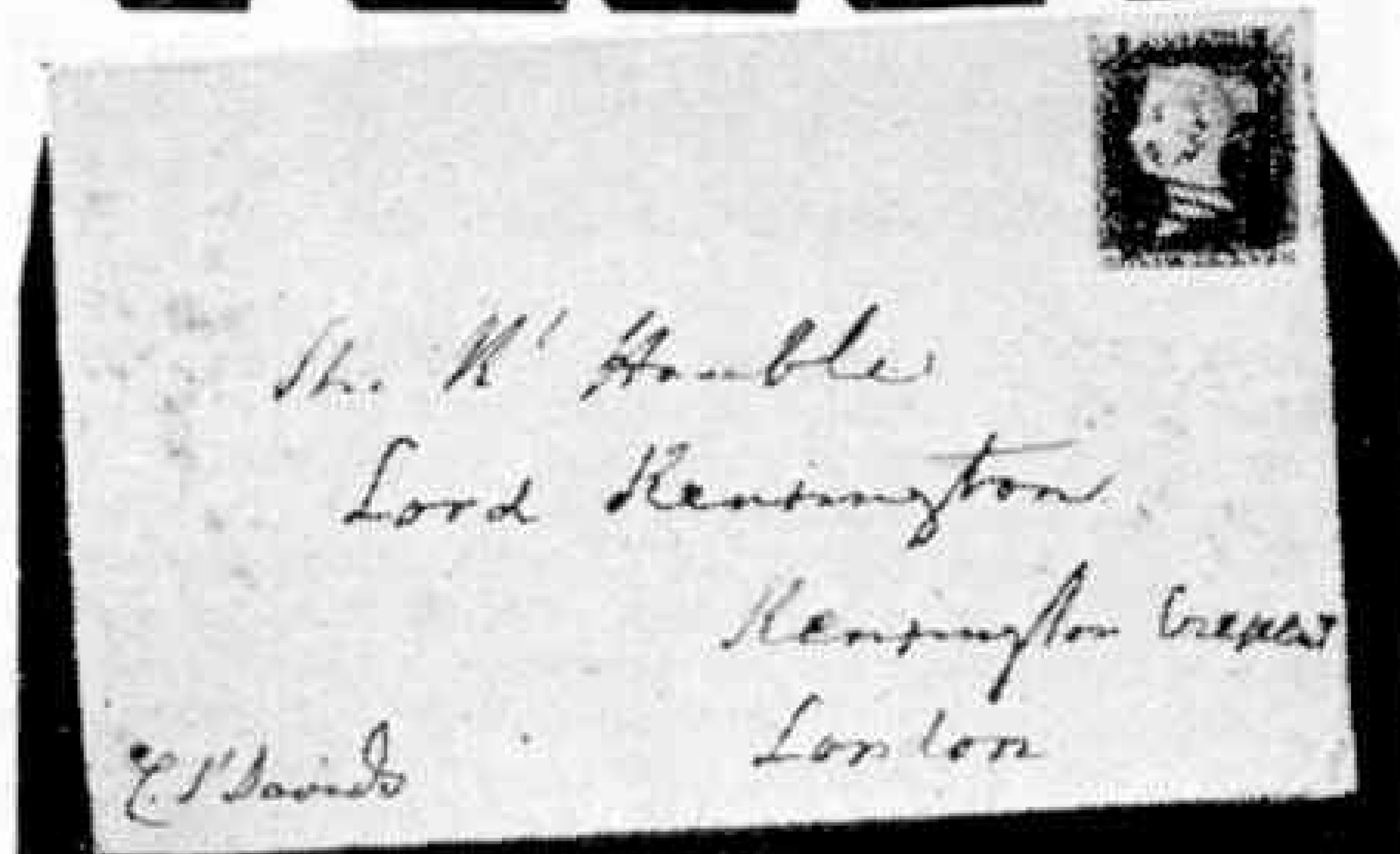
There are a lot of things I would have liked to say about these cylinders, but I am afraid I shall have to leave that for some other time. Let us turn to perforations. Here the terms line and comb are used. In the former only one row of stamps is perforated at one time. With comb the two sides and the bottom or top of the stamps are perforated simultaneously, and moving the sheets up or down one stamp at a step gives complete perforation. It is not easy always to tell by which method a stamp has been perforated, nor does it matter generally a great deal, but if the four corners of a stamp have a regular appearance, comb is probably the method that has been used.

The terms obsolete and obsolescent are often confused. In the case

(Continued on page 472)



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For other Stamp Advertisements see also pages 468 and xxii

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Stamp Gossip

AFGHANISTAN

The stamps of this country used to be the oddest pieces of paper you can imagine. Pieces used to be clipped out, as a kind of cancellation, and whenever a copy was seen, which was rarely, it was generally torn, so thin was the native paper that had been used for the job.

Now Afghanistan has stamps just as well printed as those of the next country, and the designs are

quite attractive too, as can be seen from the one illustrated. I took this off an actual letter just before I started to write these lines, so that it has been postally used. Afghanistan is certainly worth considering if it is going to continue releasing stamps like this one.

MOTHERS' DAY

No, this is no publicity stunt for that now widespread event; the world's shopkeepers do not need any help in that respect. Even so, I was quite surprised to see from the U.A.R. stamp

illustrated, which I also took myself from an envelope that had come through the post in a normal way, that the United Arab Republic has fallen so completely for the idea of Mothers' Day that it has issued a stamp to honour it. Well, it's amazing what results you can get through efficient publicity.

"NATO"

I read somewhere or other where it was mentioned, with anything but approval, that Great Britain was the only country in Nato not to have issued a special stamp to mark the tenth anniversary of the foundation of that body. I cannot say that personally I care very much whether we issue such stamps or not, but I do know that Great Britain is about the only country that does not take advantage of the wonderful free publicity that postage stamps can yield. All the rest of the world is taking advantage of this, and all kinds of objects and ideas are profiting thereby.

Take as a case in point the stamp issued by Panama. The caption reads *Institute for the*



Re-habilitation of Youngsters. I have seen a number of these stamps on letters, and they cannot help but give a boost to the object behind their issue. Maybe sometime or other we will awake to the publicity value of stamps, and then our British collections will be much more worth showing to the layman, who is surely interested in any picture that tells a story.

WHATEVER CAN THAT BE?

If I had not just happened to know what the triangular item illustrated below was, it would have given me quite a shock. No, it is not a stunt by a stamp collector—some of whom like to play such jokes—but a stamp taken from an envelope that carried an ordinary business letter. It is the right bottom quarter of a miniature sheet of stamps issued by Israel last year to commemorate the Philatelic Exhibition held in t h a t country.

Israel takes its postage stamps v e r y seriously, and from time to time, as I have m e n - tioned on m o r e

than one occasion, issues some real beauties. But the miniature sheet, representing a mosaic, was a highlight. Of course there was a big rush to buy, and it should be remembered that fanciful as such things may be, they have postal value, as the portion of the sheet illustrated shows. That actually carried a letter from Israel to Liverpool, so what more can collectors want? We eat our cake, and we still have it for further use.

THE TIP OF THE MONTH

In mentioning each month a stamp or a set of stamps that I think are undervalued, I do not wish to suggest that stamp collecting should be merely an affair of picking up bargains, much as we all like such things, in reason. Still less do I want to be thought of as encouraging collecting for quick financial profit. No, these little tips are intended for those who actually

collect in the range where the stamps belong.

I have previously mentioned that the Crown Agents are publishing figures of sales of obsolete "QE" stamps, and

some of these are very significant. For

instance, all they sold of the Malayan "Human Rights"

issue, which was on sale earlier

in the year, was just over 70,000

pairs. True, many besides were sold in

Malaya, but most of these would be used

for postage. So I would say that this pair of

stamps will be well worth having at today's

price, which is only about 1/9d. for the set.



By Brake Van Across the Mendips—*(Continued from page 437)*

and as soon as it had done so we were given the road.

The climb across the Mendips in the northbound direction contains far longer stretches of 1 in 50 than the gradient up from Radstock, but with such a light load our 2-8-0 took us up much faster than the author can recall ever travelling at any time in a passenger train. Higher and higher we climbed, passed Masbury Halt, curved into the rock cutting and cleared the summit in grand style.

Now it was a case of winding our way down to Radstock and on to the increased curvature between there and Bath. We noticed that Radstock's distant signal, which had checked us on the outward run, has a curious reverse side to it, in that it is painted with a straight black stripe on the white background, instead of the usual "V" shape.

We were checked by the distant signal on the approaches to Midford and brought to a dead stand at the home signal here, shortly before the single line section to Bath. Consulting our watches, the guard and I realised that we should have to wait for both the 4.25 p.m. semi-fast train from Bath to Bournemouth and the 4.35 p.m. local stopping train to clear the section before we were allowed into it. It did not seem long, however, before they passed, the former hauled by a class "4F" 0-6-0, and the local by a British Railways Standard 4-6-0, and we were given the road.

Collecting our single line tablet we tore into the 1 in 150 bank to Combe Down Tunnel and as we entered the guard observed the regulations by lighting his oil lamp. The tunnel traversed, we were able to stand on the platform of the brake van down through Devonshire Tunnel, and noted what a marked curve there was in it, before we emerged at the Western end and coasted gently down to Bath. There the same Western 0-6-0T was waiting, with the station master, who joined us for the final 100 yards or so into Green Park station.

Modern Small Boat Building—*(Continued from page 442)*

added as the glue is about to be applied, counteracts the accelerator and speeds up setting.

When set the inner wooden mould is removed, and there is left in stock a master mould that will produce numerous boats. The masters are highly polished before use, and coated with a material that aids separation. They are then painted, and the building up of resin and fibre commences. The wet paint intermixes with the new fabric, which becomes virtually indestructible, being incorporated in the material.

The company also market "Do It Yourself" kits for vessels ranging from a 10 ft. 6 in. outboard dinghy at £38, excluding motor, to a 14 ft. high speed launch. All parts are delivered ready cut and numbered, the "cladding material" being plywood of a mahogany type, bonded with waterproof resin adhesives. The crate in which they are packed turns into a workbench by the simple process of reversing the lid.

The underside is jigged ready to take the formers—i.e. wood shapes on which the boat "stringers," the long pieces of wood seen in the upper picture, are bent and stretched. The skeleton completed, the outer cladding of plywood is added, it is glued with resin glues, and screwed in place with brass screws. The boat is then taken off the bench, the formers removed, and inner fitting begun. For those who are afraid to tackle the hull, but feel competent enough to do the fitting out, ready made hulls are provided if requested in the newer kits.

Among the Model-Builders—*(Continued from page 457)*

Coupling is opposite one of the 6½" Rods 13, 14, 22 or 23. The two 6½" Rods 22 and 23 each carry a Washer, a Compression Spring, a ½" Pinion, a 50-tooth Gear Wheel

and a roller, made up from two ¾" Flanged Wheels and a Sleeve Piece, and are journalled in the Face Plates. A Worm Wheel on a 3½" Rod 24 meshes with one of the Gear Wheels 18.

To operate the Gear Box

When the control Bevel Wheel 20 is turned by means of its Bolt through a quarter of a revolution, the ½" Pulley and Tyre press against one of the 50-tooth Gear Wheels, thus bringing the ½" Pinions into mesh with the Gear Wheels 18. Each of the ¾" Flanged Wheels 25 forming the ends of the crane winding barrels has a Bolt in its Boss and this, when the barrel is not in gear, rests against one of the stop bolts 26. The shafts 13 and 14 must be adjusted so that the ½" Pinion 16 engages with the 1" Gear Wheel, and the 1" Gear Wheel on the Rod 14 engages with the ½" Pinion 8.

Hornby Railway Company—*(Continued from page 461)*

To use the jacks, their ends are inserted in the slots you will see on the sides of the crane carriage. The screws are then turned with finger and thumb so that they rest on the baseboard and transfer the weight of the crane from the rails to it. If your baseboard has a ballasted or painted surface and you do not wish this to be disturbed you should prepare small pieces of "packing" cut from fairly thick card or thin wood strips and place these under the screws. When the jacks are to be released the screws are turned counterclockwise to lift them from the packing and when they are free the jacks themselves can be drawn out of the crane carriage pockets and returned to the Relieving Bogies on which they are carried.

This type of operation is really good fun and I can see that many of you will thoroughly enjoy the management of the crane either when there is a mishap on your railways or in connection with some engineering work for which a powerful crane is necessary. You will find that, as in actual practice, no two cases of derailment, etc., are alike and you will have to manoeuvre and work your crane accordingly. This is where the combination of movements afforded by the crane and its jib is so useful.

Let us suppose, for instance, that you are faced with the problem of restoring a derailed wagon to the track, the sort of situation that is shown in the first of our illustrations. To do this run the crane and its carriage on to a track alongside the vehicle to be replaced, or bring it as near as possible to the latter on the track it is to occupy, so that the crane hook is above the derailed vehicle, swivelling the crane as necessary to do this. Insert the screw jacks, screw them down and then lower the hook and engage it at any convenient point of the vehicle. Lift the vehicle, swing it round to the required position and finally lower it, guiding its wheels on to the rails.

To deal with open wagons and other vehicles that cannot be lifted directly, loop cord or rubber band slings under the buffers at the ends of the vehicle, and over the hook. An open wagon, for instance, dealt with in this manner can easily be lifted up and swung round sufficiently to bring its wheels over the track, on to which it can then be gently lowered.

Stamp Collectors' Corner—*(Continued from page 469)*

of the former, the stamps have been definitely withdrawn from circulation, but it is only when the stamps are going to be withdrawn that we use the latter term.

An expression often used is "re-entry". This refers to a repair, and an application of a new entry over the old one, by the second use of the transfer roller. When the two applications, old and new, do not register exactly one over the other, you get doubled lines. This is a class of variety that is very popular with philatelists and I must admit that I am very fond of finding them myself.



"That window cleaner chap has got a confounded cheek!"

Fireside Fun

An old farm cart was ambling along a country road one dark night. A large car approached and the driver dimmed his headlights to avoid dazzling the farmer.

"George," said the farmer to his companion, "we must return the compliment. Just blow out the offside candle."

* * *

A certain film producer was well known for always belittling any suggestion made by his associates. One day he was taken ill and left the set. Hardly had he gone when someone hung up a sign.

"In case of fire, do not call the fire brigade. Just call our producer and he'll throw a wet blanket on it."

* * *

An assistant in a shoe shop was patiently serving an elderly woman, while her daughter roundly criticised each pair her mother tried on. Finally, exasperated, the assistant slipped a shoe on the older woman's foot and, turning to the daughter, asked mildly, "How does it feel?"

* * *

"How many men work here?" the efficiency expert asked the departmental head.

"Well," replied the other, "about two-thirds, I would say."

* * *

Patient: "Doctor, I'm scared. This will be my first operation."

Doctor: "I know just how you feel. This is my first operation too."

BRAIN TEASERS

WHAT AM I?

I am a word of eight letters. My first, second and third make a river in England; my fifth, sixth, seventh and eighth a measure of length; my fourth a vowel. My whole is a herb.

A MATCH PUZZLE

Using 20 matches, form three squares and four triangles in such a manner that by removing two of the matches six squares, but no triangles, will be produced.

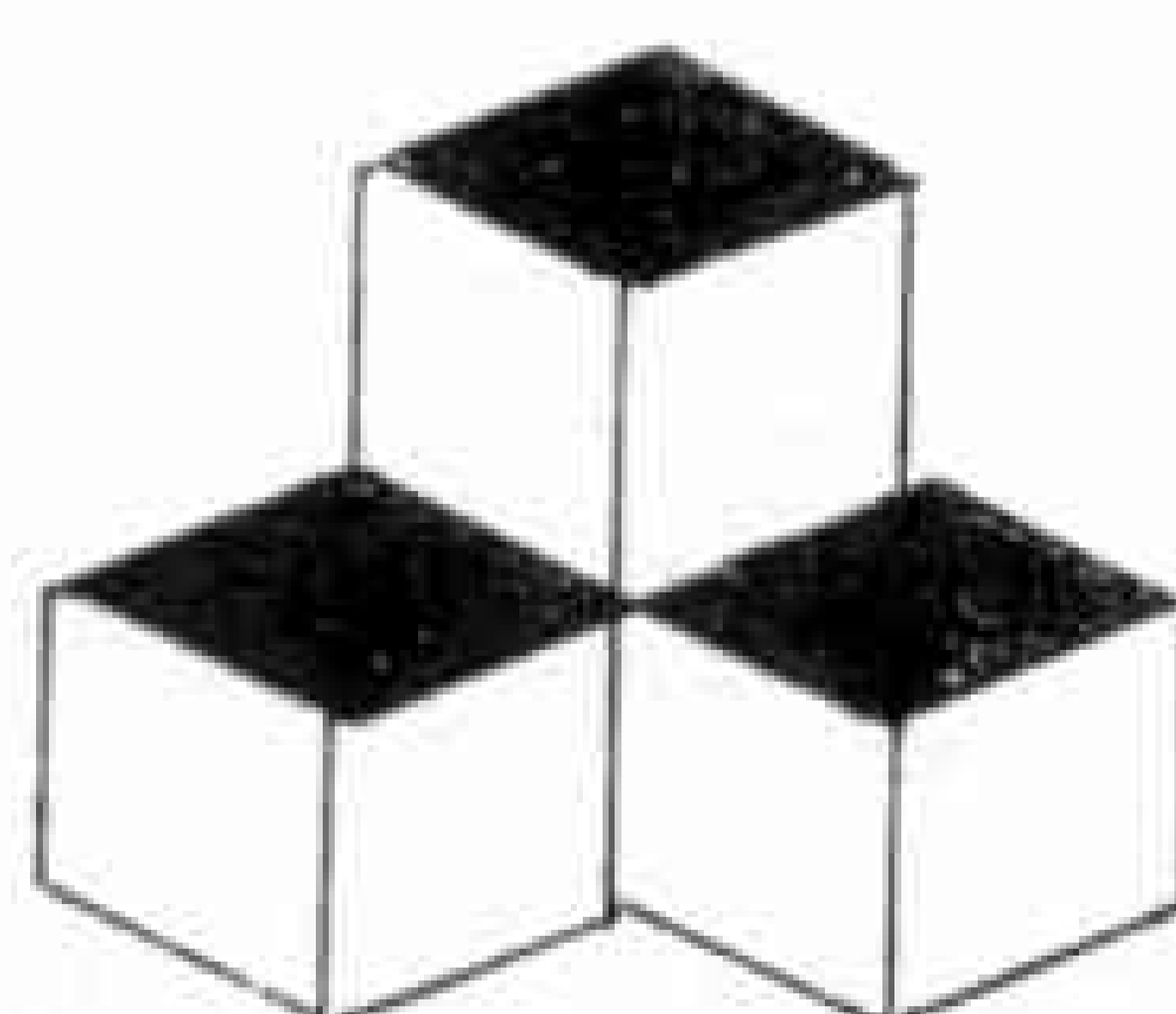
ANSWERS TO LAST MONTH'S PUZZLES

Hidden Story Titles

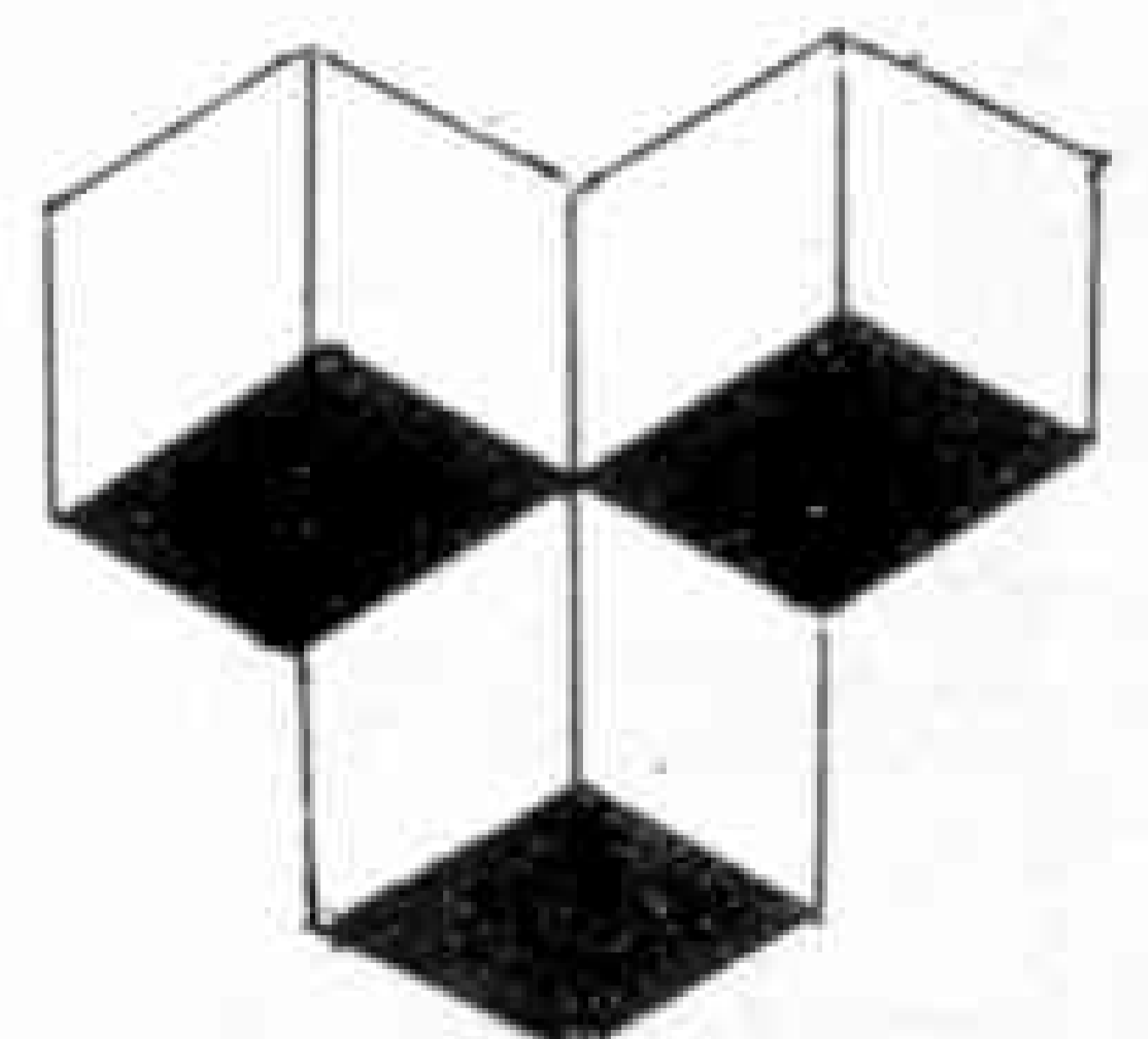
1, A Christmas Carol. 2, Treasure Island. 3, The Monkey's Paw. 4, The Scarlet Pimpernel. 5, Arabian Nights. 6, The Old Curiosity Shop. 7, Bleak House. 8, Jamaica Inn.

How Many Cubes?

If the cubes are regarded as having black *tops*, in the style illustrated in sketch A below, then there are six full cubes to be seen in the diagram reproduced in last month's *Meccano Magazine*. On the other hand if the cubes are regarded as having black *bases*, as in sketch B below, you will be able to count seven of them in the diagram. How many did you discover? This is an optical illusion.



A

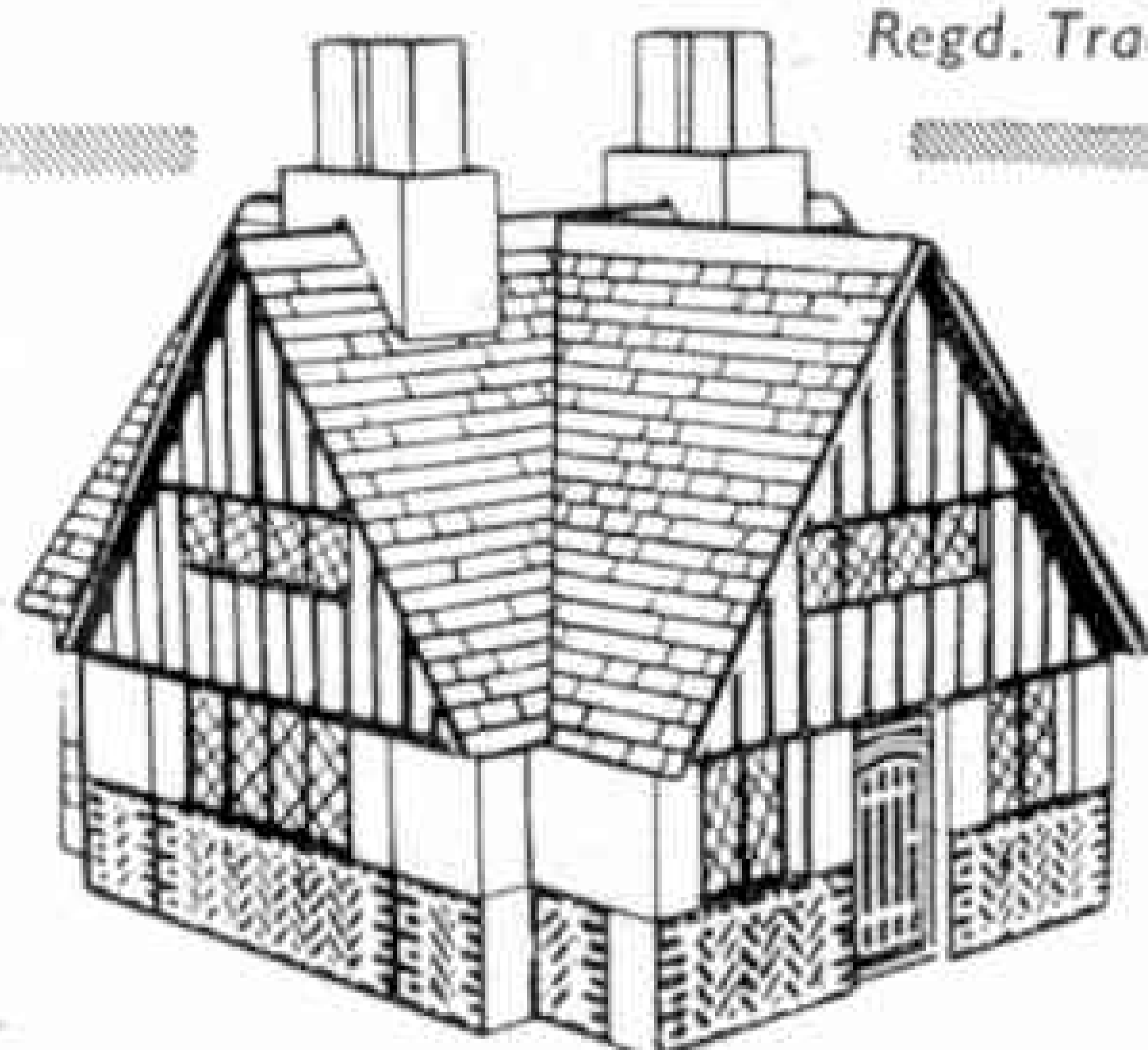


B

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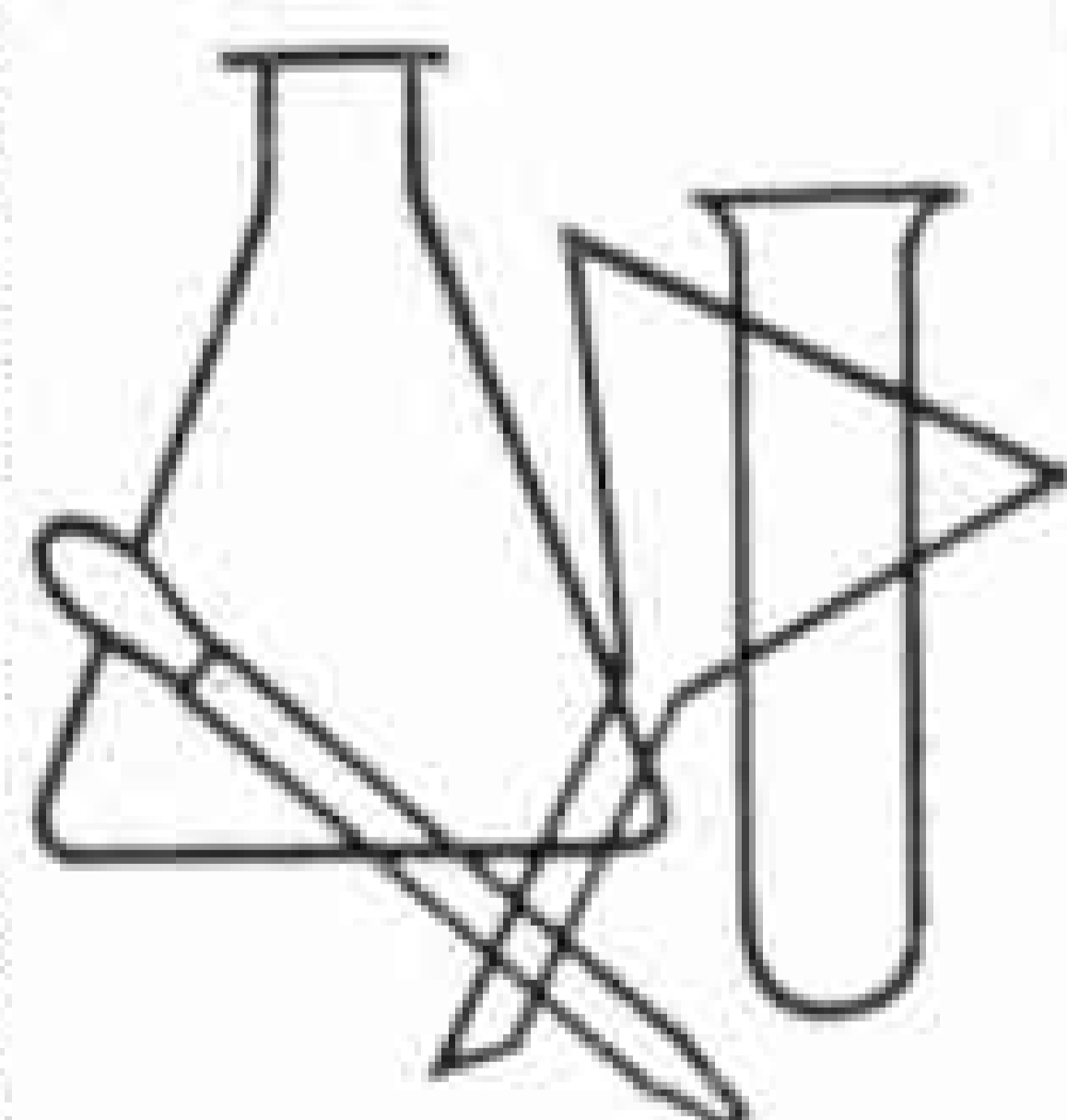
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No. 1



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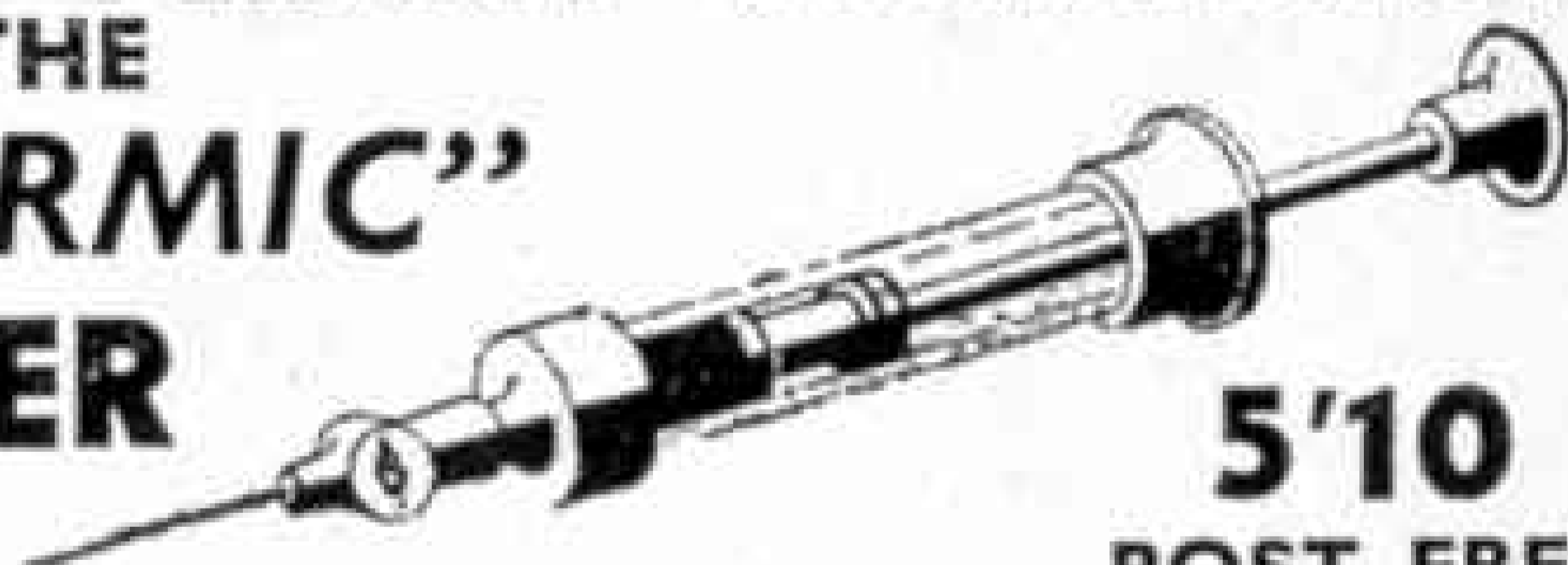
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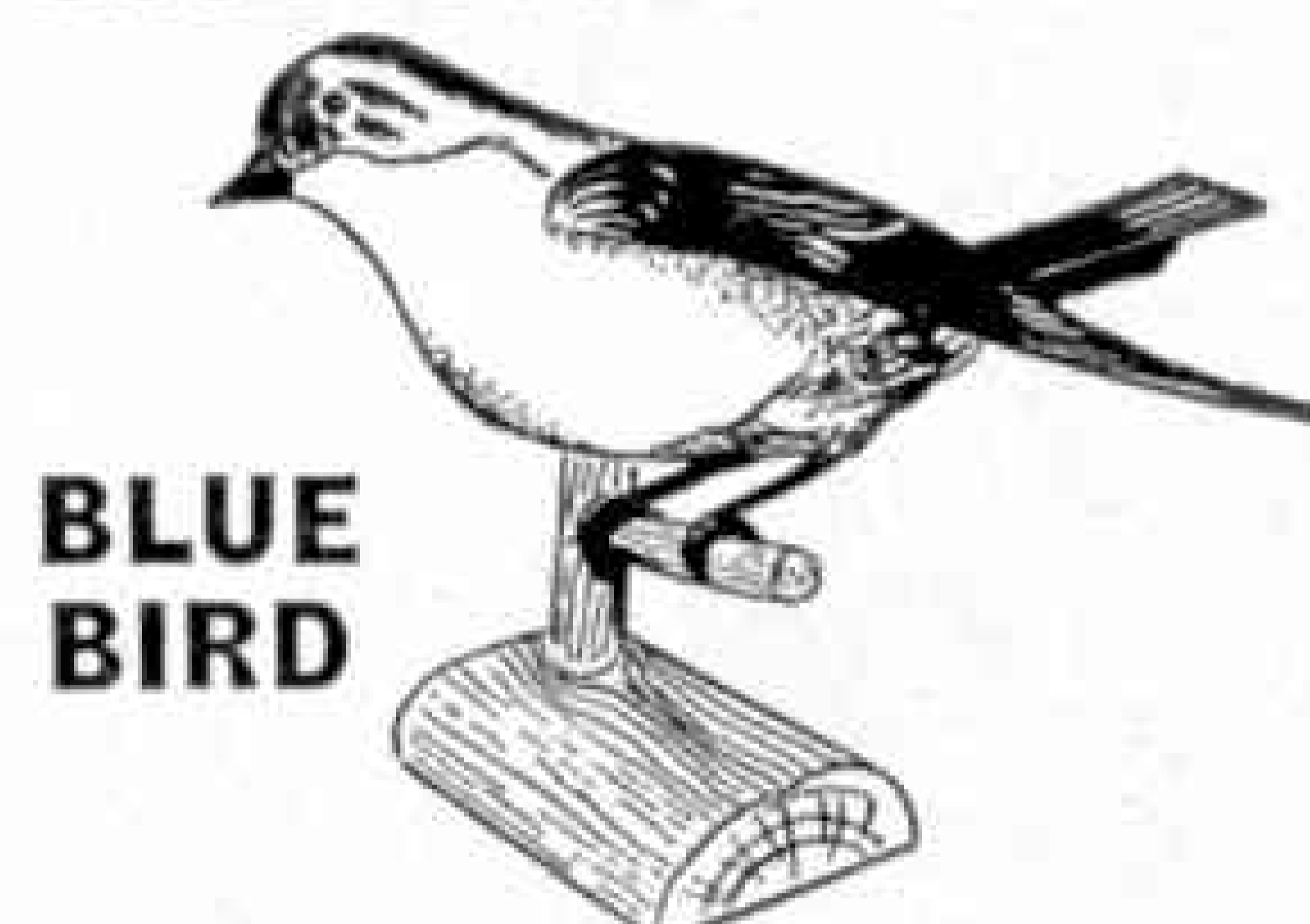
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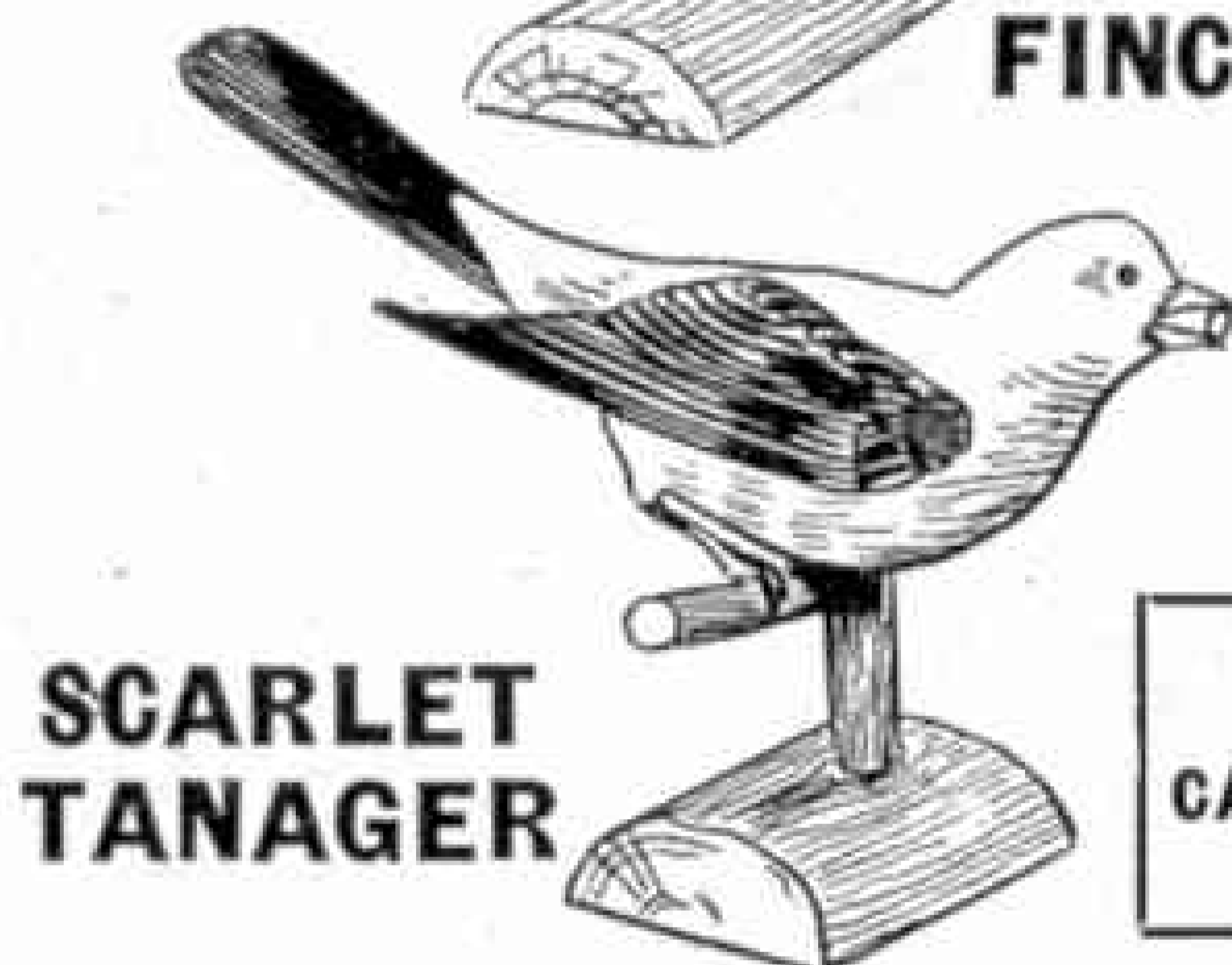


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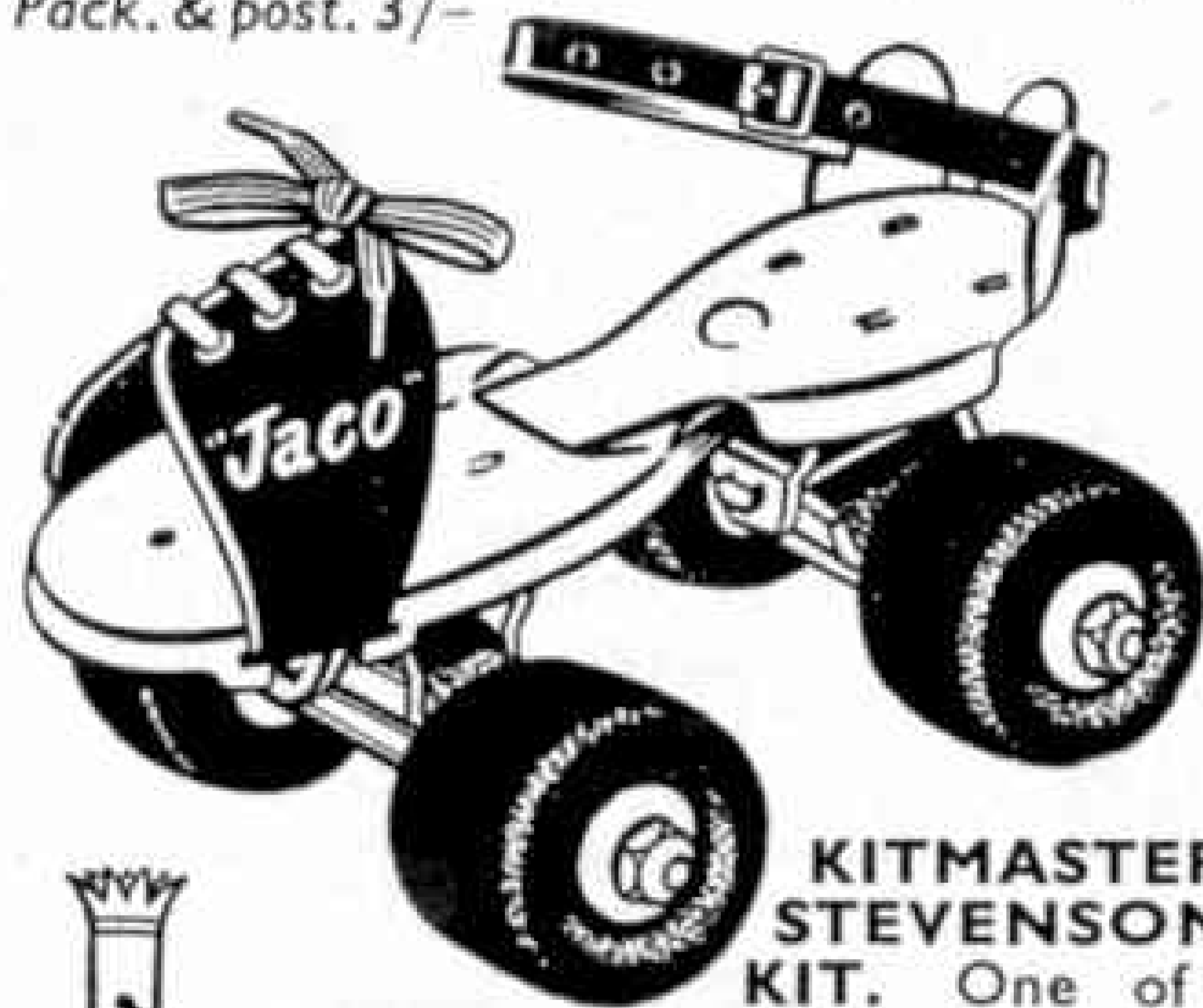
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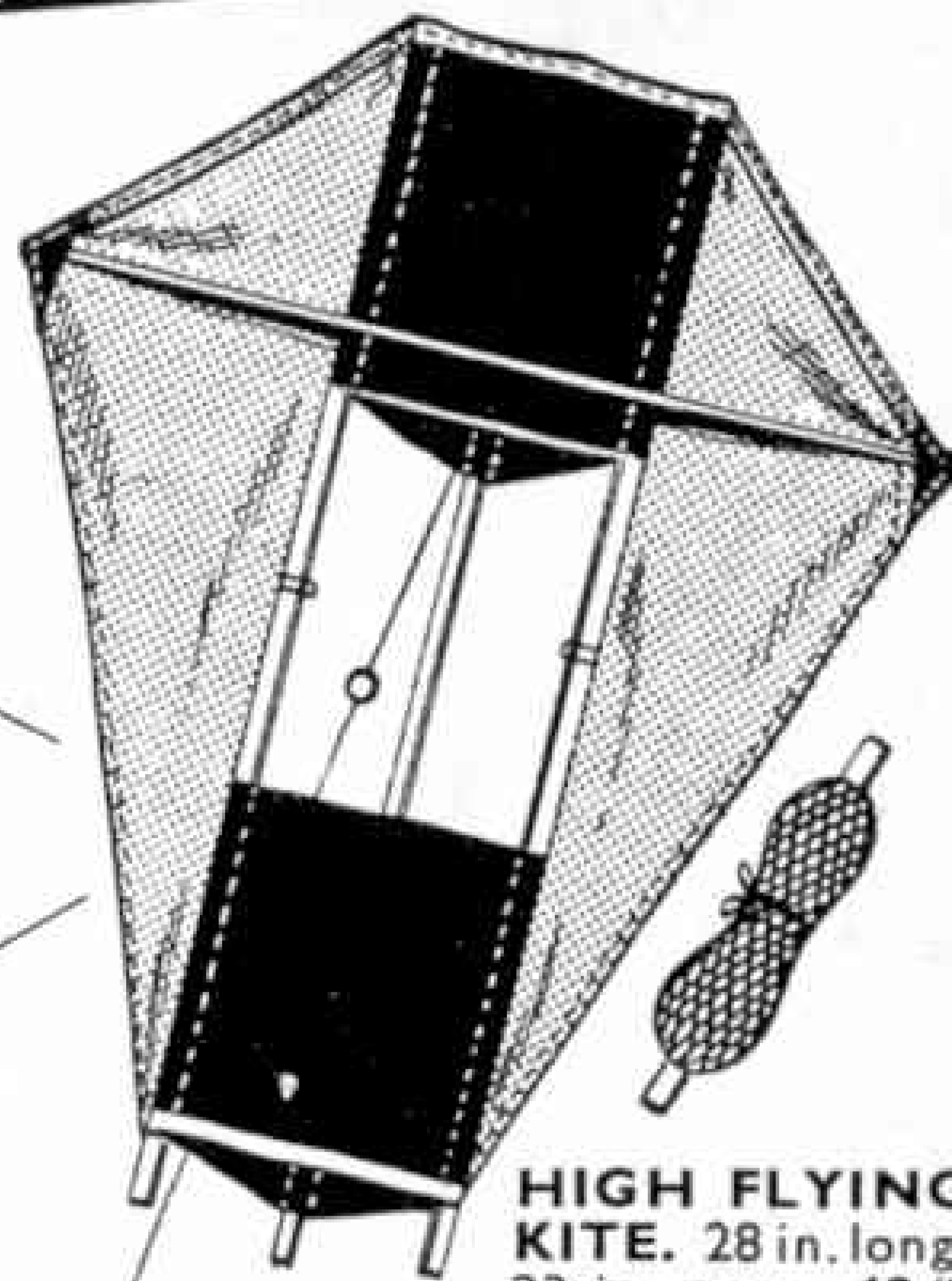


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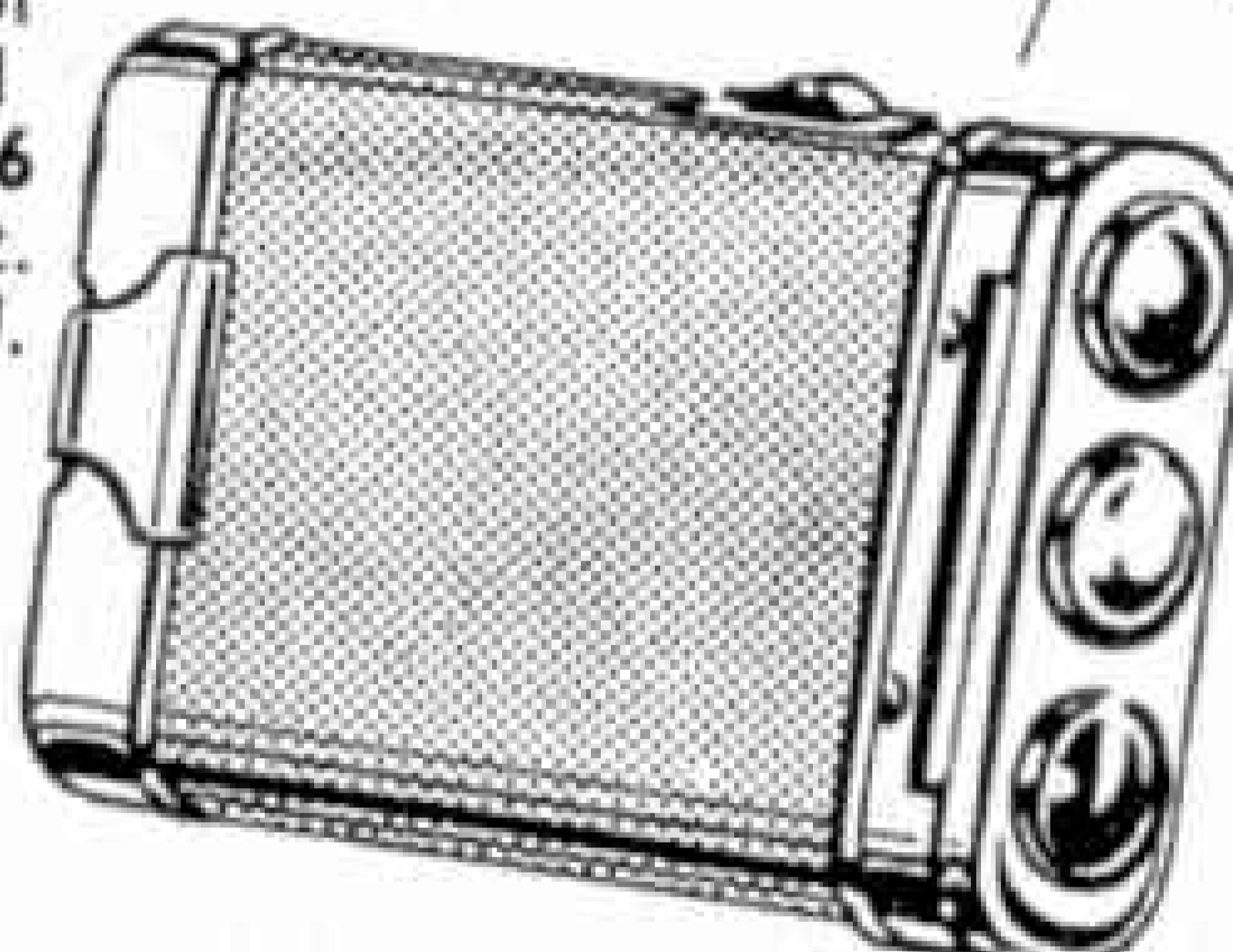
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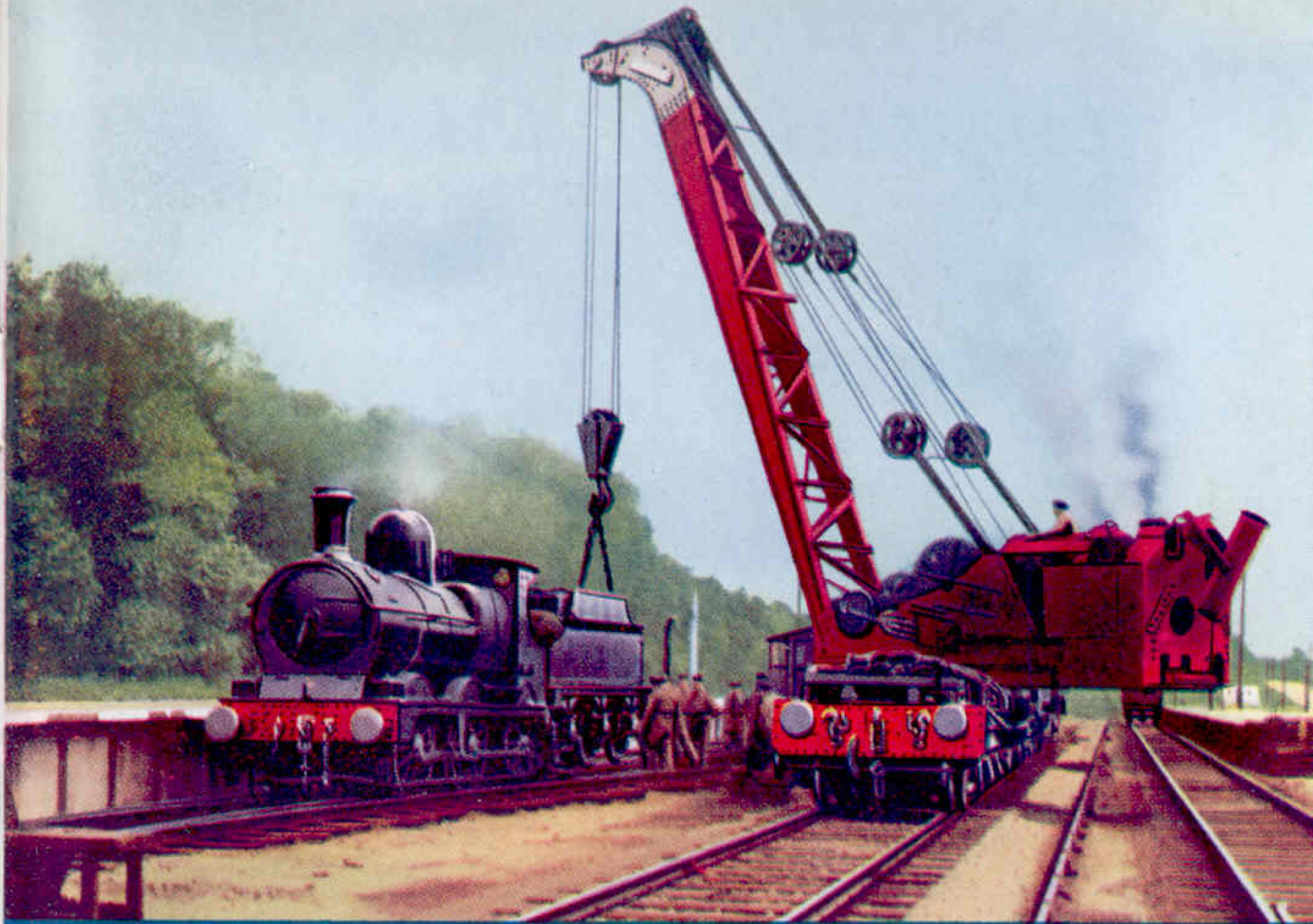
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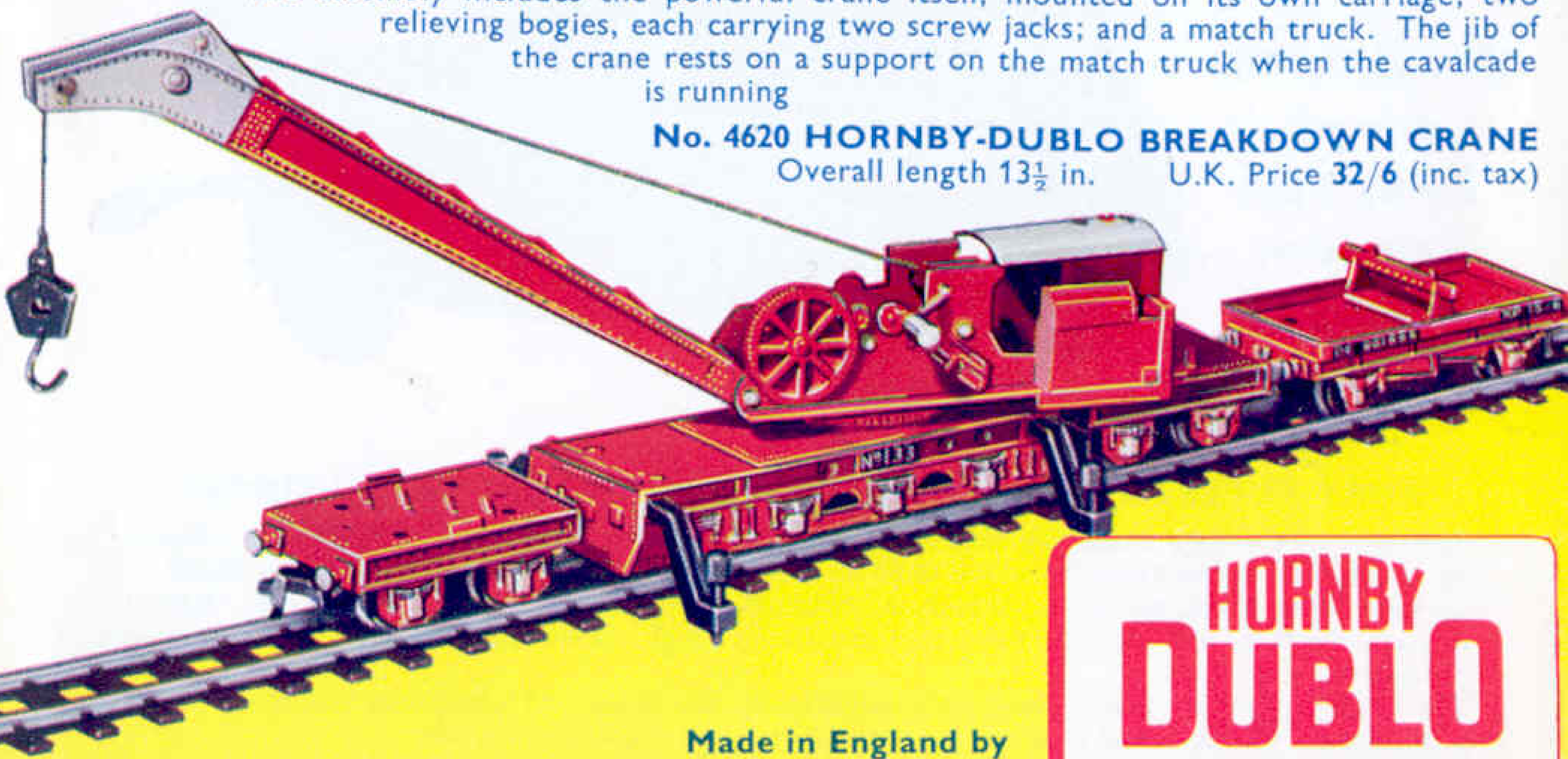
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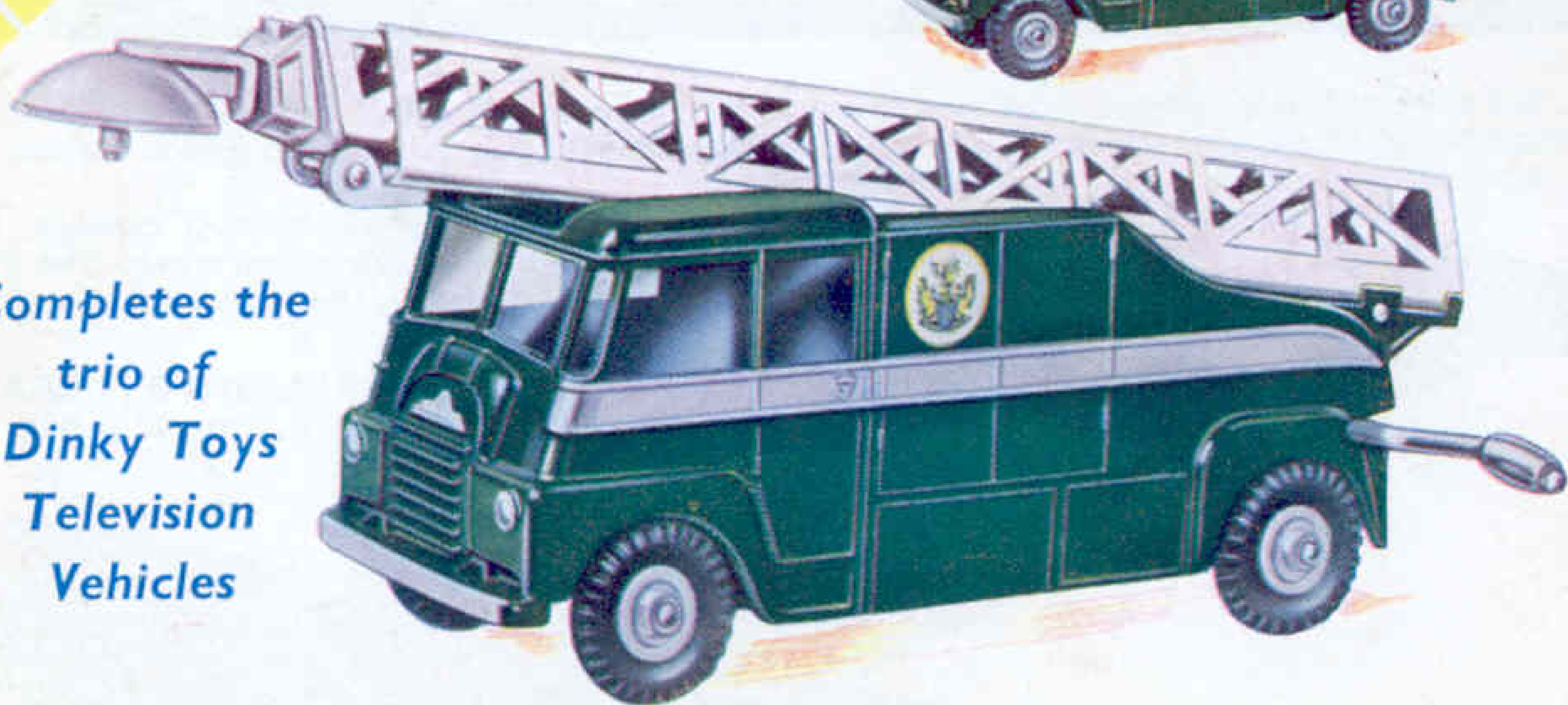
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